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Installation of Air Quality Data Handling Subsystem (AQDHS-II) for the Rhode Island Division of Air Pollution Control

Abcor, Inc, Wilmington, Mass Walden Research Div

Prepared for

Environmental Protection Agency, Boston, Mass Office of Air Programs

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INTALLATION OF AIR QUALITY DATA HANDLING SUBSYSTEM (AQDHS-II) FOR THE RHODE ISLAND DIVISION OF AIR POLLUTION CONTROL

FEBRUARY 1977
FINAL REPORT

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I

OFFICE OF AIR PROGRAMS
BOSTON, MASSACHUSETTS 02203

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16. ABSTRACT

Walden Division of Abcor, Inc., was retained by the Environmental Protection Agency in January, 1975 to install the AQDHS-II system for the Rhode Island Division of Air Pollution Control. A primary objective of the installation was to improve the Division's access to its air pollution data. Formerly, the SAROAD keypunch forms provided the only means of data storage and reporting, until the data could be processed by EPA. With AQDHS-II, a printed report of the air pollution readings is available as soon as the quarter's data has been keypunched and added to AQDHS-II. Labels concerning the parameter, time period, and location are included on every page of the report. A statistical analysis of the data, such as the geometric mean and percentile distribution, is also available.

A second objective of the installation was to reduce the required air quality data processing by EPA and to improve the quality of the data. Whereas the quarterly report consisted of handwritten SAROAD forms which had to be keypunched by the Region, AQDHS-II prepares a magnetic tape which can be processed directly. In addition, the data on the tape has passed AQDHS-II edit checks which eliminate many of the errors that previously had to be detected manually and resolved by the Region.

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Task Order 11

FINAL REPORT

Prepared for

Environmental Protection Agency
Region I
Office of Air Programs
Boston, Massachusetts 02203

and

Rhode Island Department of Health
Division of Air Pollution Control
Providence, Rhode Island 02908

February, 1977

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This work was supported by the Environmental Protection Agency (EPA) under Contract No. 68-02-1377, Task Order 11. The assistance and guidance of the EPA Project Officer, Mr. Donald C. White, was instrumental in the successful completion of this task while Mr. Tom Noel coordinated the project for the Rhode Island Division of Air Pollution Control. Mr. John Dacey, Jr., of Data Plus, Inc., served as consultant for the installation phase. Mr. Bill Serovy, of EPA Region I, located and corrected a problem in the 1974-1975 Rhode Island SAROAD data. Special thanks are extended to Mr. Jim Andrade, of the Rhode Island Department of Statewide Planning, for information concerning the remote job-entry terminal and computer operations.

I. INTRODUCTION

A. BRIEF DESCRIPTION OF AQDHS-II

AQDHS-II is a subsystem of the Comprehensive Data Handling System (CDHS). CDHS is a computerized data handling system designed and developed by the Environmental Protection Agency (EPA) to help State Air Pollution Control Agencies to manage and analyze the data generated in the course of their activities. The functions of CDHS are to store, evaluate, and perform routine calculations on this data, and to facilitate satisfying EPA reporting requirements.

AQDHS-II provides a systematic method for assembling ambient monitoring data into a computer file (called the "master file"), which then provides a central resource of air pollution control information. Data from the master file can be selectively retrieved and printed. In addition, each data field which contains an air pollution reading has an associated status flag which tells whether that reading has been reported to the EPA. At the end of each quarter, a subprogram within AQDHS-II can be used to place all the previously unreported readings on a computer tape that can be mailed to EPA to satisfy the agency's air quality data reporting requirements as specified under Section 51.7(a) of 40CRF.

B. PROJECT OBJECTIVES

Walden Division of Abcor, Inc., was retained by the Environmental Protection Agency in January, 1975 to install the AQDHS-II system for the Rhode Island Division of Air Pollution Control. A primary objective of the installation was to improve the Division's access to its air pollution data. Formerly, the SAROAD keypunch forms provided the only means of data storage and reporting, until the data could be processed by EPA. With AQDHS-II, a printed report of the air pollution readings is available as soon as the quarter's data has been keypunched and added to AQDHS-II. Labels concerning the parameter, time period, and location are included on every page of the report. A statistical analysis of the data, such as the geometric mean and

percentile distribution, is also available.

A second objective of the installation was to reduce the required air quality data processing by EPA and to improve the quality of the data. Whereas the quarterly report consisted of handwritten SAROAD forms which had to be key-punched by the Region, AQDHS-II prepares a magnetic tape which can be processed directly. In addition, the data on the tape has passed AQDHS-II edit checks which eliminate many of the errors that previously had to be detected manually and resolved by the Region.

Thus the installation of AQDHS-II in Rhode Island gives the Division of Air Pollution Control new and timely capabilities for data access and analysis, while easing the resources needed by EPA Region I to process and verify a quarterly SAROAD report from Rhode Island.

C. OVERVIEW OF THE INSTALLATION PROCEDURE

Access to an Amdahl 470V/6 computer (architecturally identical to the IBM 370 series) was provided by Comsis Transportation and Planning, which rents computer facilities to the Rhode Island Department of Health. Owner of the computer is Computer Usage Corporation (CUC), of Sunnyvale, California. A Singer 580 remote job-entry terminal, located at the Rhode Island Office of Statewide Planning, is used to communicate with the CUC computer via WATS line.

Walden's responsibilities on this project were the following:

1. To install AQDHS-II on the CUC Amdahl 470V/6.
2. To ensure that the software was functioning properly by executing the test cases supplied with the system.
3. To bring the AQDHS-II system on line by creating the initial master file, based on Rhode Island SAROAD (Storage and Retrieval of Aerometric Data system) data from 1960-1976 provided by the project officer.

4. To prepare an orientation workbook/user's manual and to present a one-week orientation and demonstration session for Division personnel.

5. To be "on call" for a period of 6 months after the orientation week to aid the Rhode Island Division of Air Pollution Control in resolving any operational problems which might arise during this period, and to assist the Division through two quarterly air quality (SAROAD) reporting cycles.

II. INSTALLATION OF AQDHS-II

The original version of AQDHS was available in 1972; the most recent version is AQDHS-II and is documented in the AQDHS-II Program Documentation and User's Guide [1]. AQDHS-II stores and maintains measurements of air quality which have been input to the subsystem in either of two formats: the EPA SAROAD format or the official AQDHS-II format. The Rhode Island SAROAD data (in card image format) from 1960-1975 was used as the source of data for the initial generation of the master file. Since a conversion program within AQDHS-II provides for the continued use of the SAROAD format for updates, this is the only format of data that will be used. AQDHS-II provides a full range of input capabilities, including adding, changing or deleting information in the master file.

The more significant processing functions of the subsystem are:

- Data checking
- Statistical calculations
- Report flagging
- Report generation

Input data is checked for acceptability in those instances where such action is possible. These checks are supplemented by normal data processing checks to ensure that data is entered with appropriate attributes. For example, numeric fields are checked to see that only numbers have been key-punched. A special function provides for flags attached to air quality data to indicate whether the data has been reported to the SAROAD system (i.e., whether reported to Region I) and whether the data has been changed since last sent to SAROAD. In addition to the SAROAD report, AQDHS-II generates three major reports for routine agency use. These are:

- A detailed report of raw data showing file contents on a site-by-site basis.
- A sliding average report showing a moving average of a selected pollutant for the ususal intervals taken over a twenty-four hour period.

- A statistical analysis report which contains the results of the statistical processing: both arithmetic and geometric means and standard deviations, maximum and minimum values, and a broad range of percentile values.

All reports are titled with descriptive headings. Details of the AQDHS-II system are contained in the EPA [1] and Walden [2] user's manuals.

A. INSTALLATION TASKS

The AQDHS-II system consists of fourteen computer programs written for American National Standard (ANS) COBOL, and one FORTRAN program. Installation of these programs at the CUC computer facility required the following steps:

- Change the JCL as given on the installation tape for compatibility with the conventions at the CUC computer center.
- Copy the system from the installation tape to the disk and update the source programs (through Update #14).
- Compile and link-edit all programs.
- Execute the fifteen test cases.
- Bring the system on-line by creating a master file from the 1960-1973 SAROAD data from NADB (National Aerometric Data Bank) and the 1974-1975 SAROAD data from Region I.
- Prepare jobs for performing all normal operations of AQDHS-II.

B. CHRONOLOGICAL RECORD OF THE INSTALLATION

Walden installed the AQDHS-II system during the period of February-April, 1976. Prior to this installation, AQDHS-II had been installed and tested on an IBM 370/155 at our local data processing facility. A user's manual, specific to AQDHS-II as installed for the Rhode Island Division of Air Pollution Control, was completed in early April, and an orientation week for Division personnel was held during the period April 19-23, 1976. The follow-up period extended for six months after the orientation week, and terminated with the completion of the contract on November 28, 1976.

A chronological record of the project is presented below:

January

- Meeting January 20, 1976 at Region I

Participants

Brian Kemerer	Walden
Richard D. Siegel	Walden
Donald White	EPA Region I
Louis Jitto	EPA Region I
Bill Serovy	EPA Region I

Discussion

Weekly reports and cost estimates are required. No changes to the AQDHS-II source code will be made without prior approval from the Project Officer. SAROAD data for 1974-1975 will be supplied by Region I, while previous data will come from NADB. There is no need for the Project Officer to supply an AQDHS-II installation tape, since the tapes and updates have already been sent to Walden by Lloyd Hedgepeth.

February

- Pre-Installation Site Visit at Rhode Island on February 6, 1976

Participants

Brian Kemerer	Walden
Susan Smith	EPA Region I
Paul Rossman	Comsis Transportation and Planning, Inc.
Tom Noel	Rhode Island Division of Air Pollution Control
Roger Marinelli	Rhode Island Division of Air Pollution Control
Jim Nolan	Rhode Island Division of Air Pollution Control

Discussion

A program flow diagram and approximate time schedule were distributed. The designated computer was changed from an IBM 370/158 to an Amdahl 470V/6 located in Sunnyvale, California. The computer terminal is located at the Rhode Island Division of Statewide Planning, and operating information will be provided by Jim Andrade or Rowland Frappier. Paul Rossman of Comsis agreed to provide the following: OS release number, COBOL and FORTRAN compiler version numbers, subaccount number to Rowland Frappier by 2/16/76 and the Amdahl billing algorithm. Tom Noel was not aware that the state had to pick up the computer bill, an estimated $1-000-$2,000 for AQDHS-II installation; he will make the necessary arrangements. The Comsis systems programmer for the Amdahl computer facility is:

Larry Seiders
2483 Old Middlefield Way
Mountain View, California 94043
(415) 964-5911

- Walden certified that we had previously installed and tested AQDHS-II at the Wang Laboratories computer center in Burlington, Massachusetts and at North Dakota Central Data Processing in Bismarck, North Dakota.
- All necessary data sets were moved from the AQDHS-II installation tape to the disk provided by COMSIS. The official AQDHS-II updates to the source code were completed.
- The COBOL compiler was IBM Program Product 5734-CB1, Release 3.1.
- The first of fifteen test cases was run successfully.
- Walden initiated the process to request an extension of period of performance, so that six months of follow-up consultation would be available after the orientation seminar.
- While Walden built an AQDHS-II master file on a previous installation contract, it was discovered that the number of digits to the right of the decimal point in a reading determines which record on the master file will contain that reading (e.g., a reading of 113.0 will be separate from a reading of 56.00). It was known that the 1960-1973 SAROAD data from Durham would have a consistent number of decimals for each parameter, but the 1974-1975 data provided by Region I would have to be made consistent. Bill Serovy was contacted on February 16, and he agreed to take care of this problem.

March

- The remaining twelve programs were compiled and link-edited.
- All fifteen test cases were run successfully.
- Tom Noel was given a description of the input formats for the site and parameter code tables. Using the summary listing of the Rhode Island SAROAD data, comprehensive parameter and site tables were prepared.
- A separate tape containing only Rhode Island SAROAD data was prepared, since the NADB tape contained both Connecticut and Rhode Island data.
- Preparation of the AQDHS-II Workbook for Rhode Island was initiated.

April

- The site and parameter code tables were created.
- Cataloged procedures were installed on a user proclib.
- The AQDHS-II master file for Rhode Island, including 1974-1975 data, was created.
- A backup tape for the Comsis disk was created.
- The AQDHS-II Workbook for Rhode Island was completed.
- The training seminar for AQDHS-II was held during the week of April 19-23, 1976.

A brief summary of the training seminar, by day, is as follows:

Monday, 4/19 - Introduction to AQDHS-II. Discussion of parameter, site, and standards tables.

Tuesday, 4/20 - Paul Rossman, from Comsis Transportation and Planning, attended Tuesday's session. Topics included updating the master file and retrieving data for reports. It was tentatively decided that RIDAPC personnel would make the second quarter's update and report, after which Comsis would provide these services on a regular basis. (Walden had arranged to be on call for both the second and third quarterly reports). Jobs to update the master file with the first quarter's data as well as jobs to practice updating the auxiliary tables were submitted by RIDAPC personnel. Since the AQHDS-II master file would

have taken up more room than is currently available on the Comsis-assigned disk, Comsis requested that the master file be transferred to tape.

Wednesday, 4/21 - Due to the breakdown of the Singer 580 terminal at the Statewide Planning Office, no jobs could be run there from Tuesday afternoon through Wednesday at 12:30 p.m. A partial printout obtained using a terminal in Cambridge, Massachusetts, revealed few errors in editing the first quarter's data. On Wednesday evening, I/O errors made it impossible to read the master file.

Thursday, 4/22 - The I/O problems remitted temporarily and the 1976 first quarter data was added to the master file. When trying to make a detailed list report of this first quarter data, the I/O problems recurred.

Friday, 4/23 - John Dacey identified the I/O problems as hardware related: probably a faulty disk. Comsis personnel were notified of the hardware problem.

Subsequent to the seminar week, the following tasks were accomplished:

- The hardware I/O problem was circumvented by placing the master file on tape rather than disk. Although it is conceivable that the problem would recur while reading the program load modules from disk, the I/O error has thus far only appeared while reading the master file. Comsis has been notified, and it is their responsibility to correct any hardware problems that might arise in the future.
- The statistical reports for 1974 and 1975, as submitted by RIDAPC personnel during the seminar week, were run successfully. The annual averages for TSP agreed with previous calculations that had been made by hand.
- A detail list report of the data for first quarter 1976 was made. It was discovered that the input cards, which had been keypunched by Comsis, had zeros punched in the fields that contained blanks on the coding forms. Therefore, readings of zero were put on the master file instead of null readings. After making an estimate of the number of cards which would have to be corrected, it was decided by Tom Noel and Brian Kemerer that the cards would have to be sent back to Comsis for correction. The quarterly SAROAD report was therefore delayed.

May

- The input cards were corrected by Comsis at Pittsburgh.
- The edit program was used to edit the corrected data.
- Previously unsubmitted data from the period 1968-1970 were also edited using the cards which had been keypunched and returned from Region I. Because the AQDHS-II programs reject a 24-hour multiple-parameter card which has a parameter and method code but no reading, about 25 percent of the cards (or 500 out of about 2000 cards) needed to be corrected before they could be added to the master file. This activity was deferred at the request of Region I.

June

- The quarterly report program (RIO9DAPC) was run in advance of adding any new data to the file. This was suggested by Lloyd Hedgepeth, NADB, in order to change the status-flag of all null-readings between 1960 and 1975 to "Sent". Otherwise, about 30,000 null-readings would have been sent to Region I on the first AQDHS-II quarterly report tape. Seventy cards which did not pass the edit were located and corrected by Walden.
- The first quarter's data was added to the master file. A detail list report was produced.
- Tom Noel reviewed the detail list report. One month of SO_2 data which had incorrect method codes was corrected by Walden.
- A statistical report and an 8-hour moving average report for CO were produced.
- Walden used the quarterly report program to generate an "add" tape, which was mailed to Region I.

July

- No activities.

August

- Walden provided telephone consultation to Mr. Dan Bryant of Comsis Transportation and Planning, Inc. Comsis was engaged by the Rhode Island Division of Air Pollution Control to process the quarterly SAROAD report for Second Quarter, 1976.

September

- Walden provided telephone consultation to Comsis.

October

- Walden provided telephone consultation to Comsis.

November

- Walden assisted in the preparation of the quarterly SAROAD report for Third Quarter data. Mr. Barry Muller, of the Rhode Island Division of Air Pollution Control, was instructed in the computer operations necessary to run the AQDHS-II system. It is anticipated that Mr. Muller will continue to make the AQDHS-II quarterly reports, since no difficulties were encountered. The tapes were mailed to Bill Serovy at the Region I office.

Walden also completed Update #14 to the AQDHS-II system. This involved the following steps:

1. New program AXMERGE was compiled, link-edited, and tested.
2. Programs TXTREDIT, FXFILMNT, and AXCONVRT were compiled, link-edited and tested.
3. The cataloged procedures AQSFUPDT and AQSTEDIT were modified to comply with Update #14.

III. DESCRIPTION OF AQDHS-II AS INSTALLED

A. LOCATION OF AQDHS-II DATA SETS

Figure 3-1 depicts the location of the AQDHS-II data sets at the CUC computer center. Note that RI0505 and RI0506 are the backup tapes, and should not be used for any other purpose. The four tapes number RI0501 to RI0504 contain successive generations of the master file, which is set up as the generational data set CORI.AQS.DATA.MSTR. Tapes TMP223 and TMP224 are submitted as the quarterly report tapes.

B. NAME AND FUNCTION OF AQDHS-II JOBS

Table 3-1 gives the name and function of each job of the AQDHS-II system as installed for Rhode Island. Jobs RI04DAPC and RI05DAPC will not be used, since the Division has chosen to use the equivalent jobs RI06DAPC and RI07DAPC which accept SAROAD format transactions.

An outline of the quarterly report process is shown in Table 3-2.

C. CHANGES MADE FROM THE STANDARD SYSTEM

Several JCL changes were made necessary by the conventions used at the CUC computer center.

1. All data sets must begin with the letters "CORI", and so "CORI.AQS" was made the project name in the cataloged procedures.
2. The disk assigned by Comsis was a 2314 volume named COMD01.
3. Generational data sets were established and named CORI.AQS.-DATA.MSTR, CORI.AQS.DATA.PRM1, CORI.AQS.DATA.PRM2, CORI.AQS.DATA.SITE, and CORI.AQS.DATA.STND.

The above changes resulted in the Job Control Language (JCL) and Cataloged Procedures given in Appendices A and B, respectively.

FIGURE 3-1

LOCATION OF AQDHS-II DATA SETS

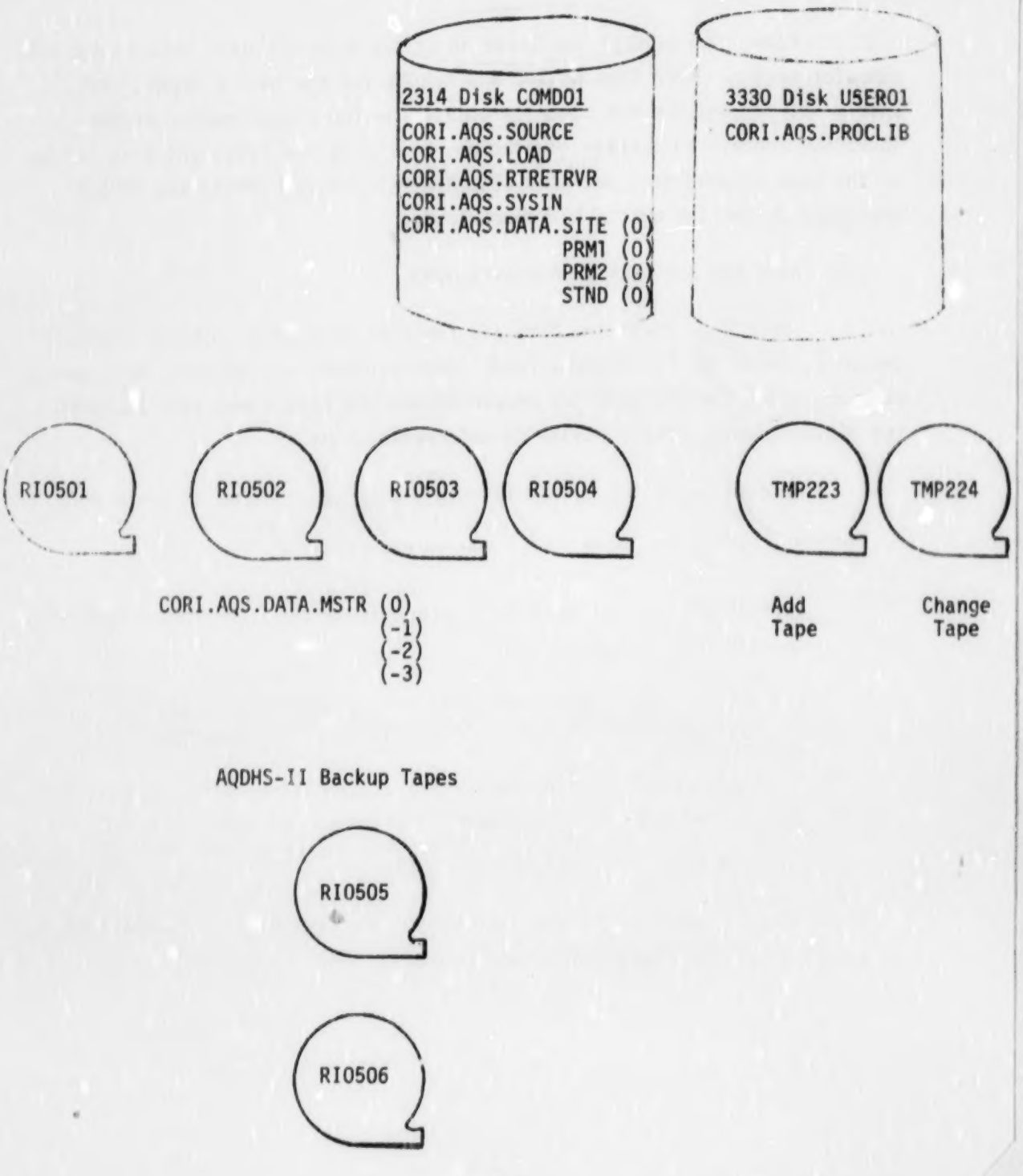

TABLE 3-1

NAME AND FUNCTION OF AQDHS-II JOBS

Job Name	Function
RI01DAPC	Update the Parameter Code Table
RI02DAPC	Update the Site Code Table
RI03DAPC	Update the Standards Table
RI04DAPC (not used)	Edit AQDHS-II Transactions
RI05DAPC (not used)	Update Master File with AQDHS-II Transactions
RI06DAPC	Edit SAROAD Data
RI07DAPC	Update Master File with SAROAD Data
RI08DAPC (left blank)	
RI09DAPC	Generate Quarterly Report Tapes
RI10DAPC	Detail List Report
RI11DAPC	Data Analysis and Statistical Report
RI12DAPC	Sliding Average Report
RI50DAPC	AQDHS-II Backup Program
RI60DAPC	AQDHS-II Restore Program

TABLE 3-2

OUTLINE OF THE QUARTERLY REPORT PROCESS

Step	Job	Purpose
1	RI01DAPC	Add new parameter codes (if necessary)
2	RI02DAPC	Add new site codes (if necessary)
3	RI03DAPC	Add new standards (if necessary)
4	RI06DAPC	Edit SAROAD cards until no errors are detected
5	RI07DAPC	Add SAROAD cards to the master file
6	RI10DAPC	List data, check for errors, and fix incorrect cards
7	RI06DAPC	Edit cards that were incorrect
8	RI07DAPC	Add cards that were incorrect to the master file
9	RI10DAPC	Produce corrected listing
10	RI11DAPC	Produce statistical summary of data
11	RI12DAPC	Produce sliding average of 8-hour carbon monoxide data
12	RI09DAPC	Produce quarterly report tapes

The following changes to the source code were necessary to make the programs run efficiently on IBM equipment, as well as to minimize the cost.

1. The SOURCE-COMPUTER and OBJECT-COMPUTER parameters of each COBOL program were changed from IBM 360 to IBM 370.
2. The file descriptions in each program accessing the master file were changed to BLOCK CONTAINS 0 RECORDS (see Figure 3-2). The blocking factor was then set by the JCL to reduce the number I/O operations required.
3. The file descriptions in each program accessing the SAROAD data, input transactions, or internal transactions were also changed to BLOCK CONTAINS 0 RECORDS (see Figure 3-3). Note that several blank lines were used.

Otherwise, no changes to the source code were made. All official updates to the AQDHS-II system will be standard IEBUPDTE format.

D. ESTIMATED JOB COSTS FOR AQDHS-II

An estimated cost for the quarterly report process, as outlined in Table 3-2, is given in Table 3-3. These costs are based on actual charges for the Third Quarter, 1976. If a job was run more than once, the total cost for that job name is reported.

```
         ./  CHANGE  NAME=ADCONVRT
         ./   NUMBER NEW1=100,INCR=100
SOURCE-COMPUTER.     IBM-370.                          00001800  *  REPLACEMENT*
OBJECT-COMPUTER.     IBM-370.                          00001900  *  REPLACEMENT*
      BLOCK CONTAINS 0 RECORDS                         00004100  *  REPLACEMENT*
      BLOCK CONTAINS 0 RECORDS                         00010800  *  REPLACEMENT*
   IEB816I MEMBER NAME (ADCONVRT) FOUND IN NM DIRECTORY. TTR IS NOW ALTERED.

         ./  CHANGE  NAME=EDRPTLST
         ./   NUMBER NEW1=100,INCR=100
SOURCE-COMPUTER.     IBM-370.                          00001300  *  REPLACEMENT*
OBJECT-COMPUTER.     IBM-370.                          00001400  *  REPLACEMENT*
      BLOCK CONTAINS 0 RECORDS                         00005100  *  REPLACEMENT*
   IEB816I MEMBER NAME (EDRPTLST) FOUND IN NM DIRECTORY. TTR IS NOW ALTERED.

         ./  CHANGE  NAME=FDFILMNT
         ./   NUMBER NEW1=100,INCR=100
SOURCE-COMPUTER.     IBM-370.                          00001400  *  REPLACEMENT*
OBJECT-COMPUTER.     IBM-370.                          00001300  *  REPLACEMENT*
      BLOCK CONTAINS 0 RECORDS                         00003800  *  REPLACEMENT*
      BLOCK CONTAINS 0 RECORDS                         00007200  *  REPLACEMENT*
   IEB816I MEMBER NAME (FDFILMNT) FOUND IN NM DIRECTORY. TTR IS NOW ALTERED.

         ./  CHANGE  NAME=IDSLDAVG
         ./   NUMBER NEW1=100,INCR=100
SOURCE-COMPUTER.     IBM-370.                          00001300  *  REPLACEMENT*
OBJECT-COMPUTER.     IBM-370.                          00001400  *  REPLACEMENT*
      BLOCK CONTAINS 0 RECORDS                         00005500  *  REPLACEMENT*
   IEB816I MEMBER NAME (IDSLDAVG) FOUND IN NM DIRECTORY. TTR IS NOW ALTERED.

         ./  CHANGE  NAME=MDSENTNL
         ./   NUMBER NEW1=100,INCR=100
SOURCE-COMPUTER.     IBM-370.                          00001500  *  REPLACEMENT*
OBJECT-COMPUTER.     IBM-370.                          00001600  *  REPLACEMENT*
      BLOCK CONTAINS 0 RECORDS                         00003400  *  REPLACEMENT*
      BLOCK CONTAINS 0 RECORDS                         00005200  *  REPLACEMENT*
   IEB816I MEMBER NAME (MDSENTNL) FOUND IN NM DIRECTORY. TTR IS NOW ALTERED.

         ./  CHANGE  NAME=RTRETHVR
         ./   NUMBER NEW1=100,INCR=100
SOURCE-COMPUTER.     IBM-370.                          00001400  *  REPLACEMENT*
OBJECT-COMPUTER.     IBM-370.                          00001500  *  REPLACEMENT*
      BLOCK CONTAINS 0 RECORDS                         00003300  *  REPLACEMENT*
      BLOCK CONTAINS 0 RECORDS                         00004100  *  REPLACEMENT*
   IEB816I MEMBER NAME (RTRETHVR) FOUND IN NM DIRECTORY. TTR IS NOW ALTERED.
```

Note: All line numbers refer to the source code as sequenced after Update #8.

FIGURE 3-2

SOURCE CODE CHANGES TO BLOCK THE MASTER FILE WITH JCL

```
./ CHANGE NAME=CDCONVRT
./ NUMBER NEW1=100,INCR=100
LABEL RECORD IS OMITTED.                                00003700 *      REPLACED*
       BLOCK CONTAINS 0 RECORDS                         00003700 *  REPLACEMENT*
                                                        00003800 *      REPLACED*
       LABEL RECORD IS OMITTED.                         00003800 *  REPLACEMENT*
LABEL RECORD IS OMITTED.                                00019500 *      REPLACED*
       BLOCK CONTAINS 0 RECORDS                         00019500 *  REPLACEMENT*
                                                        00019600 *      REPLACED*
       LABEL RECORD IS OMITTED.                         00019600 *  REPLACEMENT*
 IEB816I MEMBER NAME (CDCONVRT) FOUND IN NM DIRECTORY. TTR IS NOW ALTERED.

./ CHANGE NAME=TDTREDIT
./ NUMBER NEW1=100,INCR=100
LABEL RECORD IS OMITTED.                                00003600 *      REPLACED*
       BLOCK CONTAINS 0 RECORDS                         00003600 *  REPLACEMENT*
                                                        00003700 *      REPLACED*
       LABEL RECORD IS OMITTED.                         00003700 *  REPLACEMENT*
BLOCK CONTAINS 24 RECORDS                               00022200 *      REPLACED*
       BLOCK CONTAINS 0 RECORDS                         00022200 *  REPLACEMENT*
 IEB816I MEMBER NAME (TDTREDIT) FOUND IN NM DIRECTORY. TTR IS NOW ALTERED.

./ CHANGE NAME=FDFILMNT
./ NUMBER NEW1=100,INCR=100
BLOCK CONTAINS 24 RECORDS                               00014200 *      REPLACED*
       BLOCK CONTAINS 0 RECORDS                         00014200 *  REPLACEMENT*
 IEB816I MEMBER NAME (FDFILMNT) FOUND IN NM DIRECTORY. TTR IS NOW ALTERED.
```

Note: All line numbers refer to the source code as sequenced after Update #13.

FIGURE 3-3

SOURCE CODE CHANGE TO BLOCK THE INPUT TRANSACTIONS WITH JCL

TABLE 3-3

COST OF QUARTERLY SAROAD REPORT
USING AQDHS-II

Job Name	Function	Cost
RI01DAPC	Update the Parameter Code Table	$ .50
RI02DAPC	Update the Site Code Table	.25
RI03DAPC	Update the Standards Table	.25
RI06DAPC	Edit SAROAD Data	25.00
RI07DAPC	Update Master File with SAROAD Data	70.00
RI09DAPC	Generate Quarterly Report Tapes	21.00
RI10DAPC	Detail List Report	16.00
RI11DAPC	Data Analysis and Statistical Report	22.00
RI12DAPC	Sliding Average Report	10.00
		$165.00*

* Costs based on actual charges for Third Quarter, 1976. This cost includes all computer charges except terminal overhead and connect time.

IV. SUGGESTED MODIFICATIONS

When the AQDHS-II programs were written, it was assumed that all readings of the same parameter would have the same number of digits to the right of the decimal point. In practice, this is a poor assumption. Forms can be inadvertantly filled out with correct data, but the wrong number of digits. The data is then placed on the master file, and the Data Analysis and Statistical Report programs generate incorrect statistics; there is no warning that the statistics are in error. It is suggested that the Data Analysis program be modified to accept different number of digits from the master file.

The Sliding Average Report is currently not very useful, since it takes one page for each day and has no wrap-around capability between days. Its main application would be to 1-hour readings, and the averaging period should allow a 24-hour sliding average to be reported from 1-hour readings. The best format would be the same as the Detail List Report, but with the following addition: A summary page should give the twenty highest averages for each parameter before moving to the next. Ideally, the Statistical Analysis Report would be produced for the averaged readings so that they could be compared to the appropriate 3-hour, 8-hour, or 24-hour standards.

It would be useful to print the 0.1-percentile value on the Statistical Report for use in the Larsen model.

V. REFERENCES

1. Comprehensive Data Handling System, Air Quality Data Handling Subsystem (AQDHS-II) Program Documentation and User's Guide, EPA/450-3-74-045, Environmental Protection Agency, Research Triangle Park, North Carolina, 1974.

2. Kemerer, B.L., Workbook for Air Quality Data Handling Subsystem (AQDHS-II), prepared for the Rhode Island Division of Air Pollution Control, under contract from the U.S. Environmental Protection Agency, Research Triangle Park, North Carolina, 1976.

APPENDIX A

JOB CONTROL LANGUAGE FOR AQDHS-II

RI01DAPC - Update the Parameter Code Table

```
//RI01DAPC JOB (9100),'KEMERER-RIDAPC',CLASS=S,MSGLEVEL=(1,1)
/*SETUP  THIS JOB CALLS FOR COMSIS 2314 DISK  COMD01
//PROCLIB DD DSN=CURI.AQS.PROCLIB,DISP=SHR
//ONE EXEC AQSHUPD1
//SORT.INPUT DD *
/*
```

RI02DAPC - UPDATE THE SITE CODE TABLE

```
//RI02DAPC JOB (9100),'KEMERER-RIDAPC',CLASS=S,MSGLEVEL=(1,1)
/*SETUP  THIS JOB CALLS FOR COMSIS 2314 DISK  COMD01
//PROCLIB DD DSN=CURI.AQS.PROCLIB,DISP=SHR
//ONE EXEC AQSHUPD2
//SORT.INPUT DD *
410140002F03WEST GREENWICH, ALTON JONES CAMPUS, URI
/*
```

RI03DAPC - UPDATE THE STANDARDS TABLE

```
//RI03DAPC JOB (9100),'KEMERER-RIDAPC',CLASS=S,MSGLEVEL=(1,1)
/*SETUP  THIS JOB CALLS FOR COMSIS 2314 DISK  COMD01
//PROCLIB DD DSN=CURI.AQS.PROCLIB,DISP=SHR
//ONE EXEC AQSHUPD3
//SORT.INPUT DD *
11301F011304 PICOCURIES PER CUBIC METER
/*
```

RI06DAPC - EDIT SAROAD DATA

```
//RI06DAPC JOB (9100),'KEMERER-RIDAPC',CLASS=S,MSGLEVEL=(1,1)
/*SETUP  THIS JOB CALLS FOR COMSIS 2314 DISK COMD01
//PROCLIB DD DSN=CURI.AQS.PROCLIB,DISP=SHR
//ONE EXEC AQSCNVRT,PROGRAM=CACONVRT
//CONVERT.INPUT DD *
/*
//CONVERT.OUTPUT DD UNIT=SYSDA,
//   DISP=(NEW,PASS),
//   SPACE=(TRK,(100,50),RLSE),
//   DCB=(RECFM=FB,LRECL=80,BLKSIZE=6660),
//   DSNAME=&&OLDTRANS
//TWO EXEC AQSEDIT
//EDIT.OPTIONS DD DUMMY,DCB=BLKSIZE=80
//EDIT.INPUT DD DSN=&&OLDTRANS,
//   DCB=(RECFM=FB,LRECL=80,BLKSIZE=6880),
//   DISP=(OLD,DELETE)
```

Control card ($2 means add data to Master File), followed by SAROAD Format Input Cards

```
.07DAPC - UPDATE MASTER FILE WITH SAROAD DATA

//RI07DAPC JOB (9100),'KEMERER-RIDAPC',CLASS=S,MSGLEVEL=(1,1)
/*SETUP COMSIS 2314 DISK COMD01 AND COMSIS TAPES RI0502 AND RI0503
//PROCLIB DD DSN=CORI.AQS.PROCLIB,DISP=SHR
//ONE EXEC AQSCNVRT,PROGRAM=CACONVRT
//CONVERT.INPUT DD *
/*
//CONVERT.OUTPUT DD UNIT=SYSDA,
//   DISP=(NEW,PASS),
//   SPACE=(TRK,(100,50),RLSE),
//   DCB=(RECFM=FB,LRECL=80,BLKSIZE=6480),
//   DSNAME=&&OLDTRANS
//TWO EXEC AQSFORT,SERIAL=RI0503
//EDIT.OPTIONS DD DUMMY,DCB=BLKSIZE=80
//EDIT.INPUT DD DSN=&&OLDTRANS,
//   DCB=(RECFM=FB,LRECL=80,BLKSIZE=6480),
//   DISP=(OLD,DELETE)
//UPDATE.INPUT DD DUMMY,DCB=BLKSIZE=80
```

Change the setup card to reflect only the 2 tapes which are needed.

Control card followed by SAROAD Format Input Cards.

Serial number of the tape for the new generation of the master file. Since the present generation is on RI0502, we will cycle forward to RI0503.

If the job ABENDS, RI0503 will be deleted (i.e., RI0502 remains the present generation so there is no need to advance the sequence to RI0504).

RI09DAPC - GENERATE QUARTERLY REPORT TAPES

```
//RI09DAPC JOB (9100),'KEMERER-RIDAPC',CLASS=D,MSGLEVEL=(1,1)
/*SETUP COMSIS 2314 DISK COMD01 AND COMSIS TAPES: RI0503,RI0504,TMP223,TMP224
//PROCLIB DD DSN=CORI.AQS.PROCLIB,DISP=SHR
//ONE EXEC AQSACNVT,SERIAL=RI0504
//SUBMIT.ADDFILE DD DSN=SAROAD.ADD,
//   UNIT=T800,
//   DCB=(RECFM=FB,LRECL=80,BLKSIZE=4000,DEN=2),
//   DISP=(NEW,KEEP),
//   LABEL=(1,BLP),
//   VOL=SER=TMP223
//SUBMIT.CHNGEFL DD DSN=SAROAD.CHNG,
//   UNIT=T800,
//   DCB=(RECFM=FB,LRECL=80,BLKSIZE=4000,DEN=2),
//   DISP=(NEW,KEEP),
//   LABEL=(1,NL),
//   VOL=SER=TMP224
```

Serial number of the tape for the new generation of the Master File. Assuming that all the Second Quarter's data was added to the tape RI0503 in the previous job (RI07DAPC), we would use RI0504.

RI10DAPC - DETAIL LIST REPORT

```
//RI10DAPC JOB (9100),'KEMERER-RIDAPC',CLASS=S,MSGLEVEL=(1,1)
/*SETUP COMSIS 2314 DISK COMD01 AND COMSIS TAPE RI0504
//PROCLIB DD DSN=CORI.AGS.PROCLIB,DISP=SHR
//ONE EXEC AGSRETVR,
//          ANSWRFL=RIANSR08,
//          DISP='NEW,PASS,DELETE'
//COMPILE.INPUT DD *
$$SELECT
YEAR                    = '76'  AND
MONTH                   > '06'  AND
MONTH                   < '10'
$$END
/*
//TWO EXEC AGSELIST,
//          MSTRFIL=RIANSR08
//REPORT.INPUT DD *
MEAN
/*
```

Change to reflect the serial number of the present Master File.

These cards select 3rd quarter data

RI11DAPC - DATA ANALYSIS AND STATISTICAL REPORT

```
//RI11DAPC JOB (9100),'KEMERER-RIDAPC',CLASS=S,MSGLEVEL=(1,1)
/*SETUP COMSIS 2314 DISK COMD01 AND TAPE: RI0504
//PROCLIB DD DSN=CORI.AGS.PROCLIB,DISP=SHR
//ONE EXEC AGSRETVR,
//          ANSWRFL=RIANSR07,
//          DISP='NEW,PASS,DELETE'
//COMPILE.INPUT DD *
$$SELECT
YEAR                    = '76'
$$END
/*
//TWO EXEC AGSMSENT,
//          MSTRFIL=RIANSR07,
//          STATFIL=RIANSR07
//TWOA EXEC AGSNSENT
//THREE EXEC AGSDANAL,PROGRAM=DASTATIS,
//          MSTRFIL=RIANSR07,
//          STATFIL=STANSR07
//FOUR EXEC AGSSLIST,
//          STATFIL=STANSR07
```

This card selects all 1976 data

R12DAPC - SLIDING AVERAGE REPORT

```
//R12DAPC JOB (9100),'REMEREN-R1DAPC',CLASS=S,MSGLEVEL=(1,1)
/*SETUP COMSIS 2314 DISK CUND01 AND TAPE: R10504
//PROCLIB DD DSN=CURI.AQS.PROCLIB,DISP=SHR
//ONE EXEC AQSRETVR,
//          ANS=REL=R1ANSR06,
//          DISP='NEW,PASS,DELETE'
//COMPILE.INPUT DD *
$$SELECT
YEAR                    = '76'          AND
MONTH                   > '06'          AND
MONTH                   < '10'          AND
PARAMETER-CODE          = '42101'
$$END
/*
//TWO EXEC AQSLIST,
//          MSTRFIL=R1ANSR06
//REPORT.INPUT DD *
MEANUM
/*
```

Change to reflect the serial number of the present Master File.

These cards select 2nd Quarter Carbon Monoxide Data

This control card selects an 8-hour averaging period for the sliding average report.

RI50DAPC - AQDHS-II BACKUP PROGRAM

```
//RI50DAPC JOB (9177),'REMEMBER-RICAFC',CLASS=S,MSGLEVEL=(1,1)
/*SETUP COMSIS 2314 DISK COMDO1 AND COMSIS TAPE RI0506
//ONE EXEC PGM=IEHMOVE
//SYSPRINT DD SYSOUT=A
//SYSUT1 DD UNIT=SYSDA,SPACE=(CYL,(1,1))
//DDISK DD UNIT=2314,VOL=SER=COMDO1,DISP=OLD
//DISK2 DD UNIT=3330,VOL=SER=USERO1,DISP=OLD
//TAPEOUT DD UNIT=TAPE,
//  LABEL=(,SL),
//  DCB=(RECFM=FB,LRECL=80,BLKSIZE=800),
//  DISP=OLD,
//  VOL=(,RETAIN,SER=RI0506)
//SYSIN DD *
 COPY DSNAME=COPI.AQS.SOURCE,TO=TAPE=(RI0506,2),FROM=2314=COMDO1,      X
               TODD=TAPEOUT
 COPY DSNAME=COPI.AQS.LOAD,TO=TAPE=(RI0506,3),FROM=2314=COMDO1,        X
               TODD=TAPEOUT
 COPY DSNAME=COPI.AQS.FPUCLIB,TO=TAPE=(RI0506,4),FROM=3330=USERO1,     X
               TODD=TAPEOUT
 COPY DSNAME=COPI.AQS.SYSIN,TO=TAPE=(RI0506,5),FROM=2314=COMDO1,       X
               TODD=TAPEOUT
/*
//TWO EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
//SYSIN DD DUMMY,DCB=BLKSIZE=80
//SYSUT1 DD DSN=COPI.AQS.ATPETRVA,
//  DISP=(OLD,KEEP)
//SYSUT2 DD DSN=COPI.AQS.ATPETRVA,
//  UNIT=TAPE,
//  LABEL=(4,SL),
//  DCB=(RECFM=F,LRECL=80,BLKSIZE=80),
//  DISP=NEW,
//  VOL=(,RETAIN,SER=RI0506)
//THREE EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
//SYSIN DD DUMMY,DCB=BLKSIZE=80
//SYSUT1 DD DSN=COPI.AQS.DATA.PRM1(0),
//  DISP=(OLD,KEEP)
//SYSUT2 DD DSN=COPI.AQS.DATA.PRM1,
//  UNIT=TAPE,
//  LABEL=(7,SL),
//  DCB=(RECFM=FB,LRECL=16,BLKSIZE=1632),
//  DISP=NEW,
//  VOL=(,RETAIN,SER=RI0506)
//FOUR EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
//SYSIN DD DUMMY,DCB=BLKSIZE=80
//SYSUT1 DD DSN=COPI.AQS.DATA.PRM2(0),
//  DISP=(OLD,KEEP)
//SYSUT2 DD DSN=COPI.AQS.DATA.PRM2,
//  UNIT=TAPE,
//  LABEL=(8,SL),
//  DCB=(RECFM=FB,LRECL=110,BLKSIZE=9680),
//  DISP=NEW,
//  VOL=(,RETAIN,SER=RI0506)
//FIVE EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
```

RI50DAPC - AQDHS-II BACKUP PROGRAM (cont.)

```
//SYSIN DD DUMMY,DCB=BLKSIZE=80
//SYSUT1 DD DSN=CORI.AQS.DATA.SITE(0),
//   DISP=(OLD,KEEP)
//SYSUT2 DD DSN=CORI.AQS.DATA.SITE,
//   UNIT=TAPE,
//   LABEL=(9,SL),
//   DCB=(RECFM=FB,LRECL=72,BLKSIZE=1008),
//   DISP=NEW,
//   VOL=(,RETAIN,SER=AIC506)
//STEP EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
//SYSIN DD DUMMY,DCB=BLKSIZE=80
//SYSUT1 DD DSN=CORI.AQS.DATA.STAL(0),
//   DISP=(OLD,KEEP)
//SYSUT2 DD DSN=CORI.AQS.DATA.STAL,
//   UNIT=TAPE,
//   LABEL=(10,SL),
//   DCB=(RECFM=FB,LRECL=112,BLKSIZE=1680),
//   DISP=NEW,
//   VOL=(,RETAIN,SER=AIC506)
```

RI60DAPC - AQDHS-II RESTORE PROGRAM

```
//RI60DAPC JOB (5137),'KEEPER-PIDAPC',CLASS=S,MSGLEVEL=(1,1)
/*SETUP COMSIS 2314 DISK COMD01 AND COMSIS TAPE RI0506
//ONE EXEC PGM=IEHMOVE
//SYSPRINT DD SYSOUT=A
//SYSUT1 DD UNIT=SYSDA,SPACE=(CYL,(1,1))
//DDISK DD UNIT=2314,VOL=SER=COMD01,DISP=OLD
//DISK2 DD UNIT=3330,VOL=SER=USER01,DISP=OLD
//TAPE1 DD UNIT=TAPE,
//  LABEL=(,SL),
//  DCB=(RECFM=FB,LRECL=80,BLKSIZE=800),
//  DISP=OLD,
//  VOL=(,RETAIN,SER=RI0506)
//SYSIN DD *
 COPY PDS=CORI.AQS.SOURCE,FROM=TAPE=(RI0506,2),TO=2314=COMD01,          X
               FROMDD=TAPE1
 COPY PDS=CORI.AQS.LOAD,FROM=TAPE=(RI0506,3),TO=2314=COMD01,            X
               FROMDD=TAPE1
 COPY PDS=CORI.AQS.PROCLIB,FROM=TAPE=(RI0506,4),TO=3330=USER01,         X
               FROMDD=TAPE1
 COPY PDS=CORI.AQS.SYSIN,FROM=TAPE=(RI0506,5),TO=2314=COMD01,           X
               FROMDD=TAPE1
/*
//TWO EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
//SYSIN DD DUMMY,DCB=BLKSIZE=80
//SYSUT1 DD DSN=CORI.AQS.RTRETPVR,
//  UNIT=TAPE,
//  LABEL=(4,SL),
//  DCB=(RECFM=F,LRECL=80,BLKSIZE=80),
//  DISP=OLD,
//  VOL=(,RETAIN,SER=RI0506)
//SYSUT2 DD DSN=CORI.AQS.RTRETPVR,
//  UNIT=2314,
//  SPACE=(TRK,(10,10),RLSE),
//  DCB=(RECFM=F,LRECL=80,BLKSIZE=80),
//  DISP=(NEW,KEEP),
//  VOL=SER=COMD01
//THREE EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
//SYSIN DD DUMMY,DCB=BLKSIZE=80
//SYSUT1 DD DSN=CORI.AQS.DATA.PPM1,
//  UNIT=TAPE,
//  LABEL=(7,SL),
//  DCB=(RECFM=FB,LRECL=18,BLKSIZE=1692),
//  DISP=OLD,
//  VOL=(,RETAIN,SER=RI0506)
//SYSUT2 DD DSN=CORI.AQS.DATA.PPM1(+1),
//  UNIT=2314,
//  SPACE=(TRK,(10,10),RLSE),
//  DCB=(RECFM=FB,LRECL=18,BLKSIZE=1692),
//  DISP=(NEW,KEEP),
//  VOL=SER=COMD01
//FOUR EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
//SYSIN DD DUMMY,DCB=BLKSIZE=80
//SYSUT1 DD DSN=CORI.AQS.DATA.PPM2,
```

```
    UNIT=TAPE,
/   LABEL=(9,SL),
//   DCB=(RECFM=FB,LRECL=110,BLKSIZE=1650),
//   DISP=OLD,
//   VOL=(,RETAIN,SER=RJ0506)
//SYSUT2 DD DSN=COPI.ACS.DATA.PRM2(+1),
//   UNIT=2314,
//   SPACE=(TRK,(10,10),RLSE),
//   DCB=(RECFM=FB,LRECL=110,BLKSIZE=1650),
//   DISP=(NEW,KEEP),
//   VOL=SER=COM001
//FIVE EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
//SYSIN DD DUMMY,DCB=BLKSIZE=80
//SYSUT1 DD DSN=COPI.ACS.DATA.SITE,
//   UNIT=TAPE,
//   LABEL=(9,SL),
//   DCB=(RECFM=FB,LRECL=72,BLKSIZE=1656),
//   DISP=OLD,
//   VOL=(,RETAIN,SER=RJ0506)
//SYSUT2 DD DSN=COPI.ACS.DATA.SITE(+1),
//   UNIT=2314,
//   SPACE=(TRK,(10,10),RLSE),
//   DCB=(RECFM=FB,LRECL=72,BLKSIZE=1656),
//   DISP=(NEW,KEEP),
//   VOL=SER=COM001
//SIX EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
//SYSIN DD DUMMY,DCB=BLKSIZE=80
//SYSUT1 DD DSN=COPI.ACS.DATA.STND,
//   UNIT=TAPE,
//   LABEL=(10,SL),
//   DCB=(RECFM=FB,LRECL=112,BLKSIZE=1680),
//   DISP=OLD,
//   VOL=(,RETAIN,SER=RJ0506)
//SYSUT2 DD DSN=COPI.ACS.DATA.STND(+1),
//   UNIT=2314,
//   SPACE=(TRK,(10,10),RLSE),
//   DCB=(RECFM=FB,LRECL=112,BLKSIZE=1680),
//   DISP=(NEW,KEEP),
//   VOL=SER=COM001
```

APPENDIX B
CATALOGED PROCEDURES FOR AQDHS-II

```
//AQSACNVT PROC PROJECT='CONT,AQS',                                     00006100
//             PROGRAM=AXCONVRT,                                        00006200
//             OLDMSTR='MSTR(0)',                                       00006300
//             NEWMSTR='MSTR(+1)',                                      00006400
//             UNIT=TAPE,                                               00006500
//             SERIAL=,                                                 00006600
//             DISP='NEW,CATLG,DELETE',                                 00006700
//             OUT=A                                                    00006800
//*                                                                     00006900
//SUBMIT  EXEC PGM=&PROGRAM,                                           00007000
//             REGION=80K,                                              00007100
//             TIME=20                                                  00007200
//*                                                                     00007300
//* CONVERT AQDMS FILE TO SAROAD INPUT FORMAT                          00007400
//*                                                                     00007500
//STEPLIB   DD DSNAME=&PROJECT,,LOAD,                                  00007600
//             DISP=(SHR,PASS)                                          00007700
//*                                                                     00007800
//* INPUT DATA SET - OLD AQDMS MASTER FILE                             00007900
//*                                                                     00008000
//AQSMASTR  DD DSNAME=&PROJECT,,DATA,&OLDMSTR,                         00008100
//             DISP=(SHR,PASS)                                          00008200
//*                                                                     00008300
//* OUTPUT DATA SET - NEW AQDMS MASTER FILE                            00008400
//*                                                                     00008500
//AQSNEWMS  DD UNIT=&UNIT,                                             00008600
//             VOL=SER=&SERIAL,                                         00008700
//             DISP=(&DISP),                                            00008800
//             DCB=(SYS3.DSCB,RECFM=VB,BLKSIZE=7100),                   00008900
//             DSNAME=&PROJECT,,DATA,&NEWMSTR                           00009000
//*                                                                     00009100
//* OUTPUT DATA SET - SAROAD ADD FILE                                  00009200
//*                                                                     00009300
//AQSADDFL  DD  DDNAME=ADDFILE                                         00009400
//*                                                                     00009500
//* OUTPUT DATA SET - SAROAD CHANGE FILE                               00009600
//*                                                                     00009700
//AQSCHGFL  DD  DDNAME=CHNGEFL                                         00009800
//*                                                                     00009900
//* OUTPUT DATA SET - DIAGNOSTIC MESSAGES                              00010000
//*                                                                     00010100
//AQSPRINT  DD SYSOUT=&OUT                                             00010200
//*                                                                     00010300
//* OUTPUT DATA SETS - SYSTEM OPERATION                                00010400
//*                                                                     00010500
//SYSPRINT  DD SYSOUT=&OUT                                             00010600
//*                                                                     00010700
//SYSOUT    DD SYSOUT=&OUT                                             00010800
//*                                                                     00010900
//SYSDBOUT  DD SYSOUT=&OUT                                             00011000
//*                                                                     00011100
//SYSDTERM  DD SYSOUT=&OUT                                             00011200
//*                                                                     00011300
//SYSUDUMP  DD SYSOUT=&OUT                                             00011400
//*                                                                     00011500
```

```
//AQSCNVRT PROC PROJECT='COM.AQS',                                      00000100
//             PROGNAME=CACONVRT,                                       00000200
//             OUT=A                                                    00000300
//*                                                                     00000400
//CONVERT EXEC PGM=&PROGNAME,                                           00000500
//             REGION=6M,                                               00000600
//             TIME=10                                                  00000700
//*                                                                     00000800
//* CONVERT SAMOAD INPUT FORMAT TO AQUMS INPUT FORMAT                   00000900
//*                                                                     00001000
//SYSPRINT  DD DSNAME=&PROJECT..LOAD,                                   00001100
//             DISP=(SHR,PASS)                                          00001200
//*                                                                     00001300
//* INPUT DATA SET - SAMOAD TRANSACTIONS                                00001400
//*                                                                     00001500
//AQSAMOAD  DD DDNAME=INPUT,                                            00001600
//             DCB=BLKSIZE=80                                           00001700
//*                                                                     00001800
//* OUTPUT DATA SET - AQUMS TRANSACTIONS                                00001900
//*                                                                     00002000
//AQSTRANS  DD DDNAME=OUTPUT                                            00002100
//*                                                                     00002200
//* OUTPUT DATA SET - DIAGNOSTIC MESSAGES                               00002300
//*                                                                     00002400
//AQSPRINT  DD SYSOUT=&OUT                                              00002500
//*                                                                     00002600
//* OUTPUT DATA SETS - SYSTEM OPERATION                                 00002700
//*                                                                     00002800
//SYSPRINT  DD SYSOUT=&OUT                                              00002900
//*                                                                     00003000
//SYSOUT    DD SYSOUT=&OUT                                              00003100
//*                                                                     00003200
//SYSUDUMP  DD SYSOUT=&OUT                                              00003300
//*                                                                     00003400
//SYSOUTERR DD SYSOUT=&OUT                                              00003500
//*                                                                     00003600
//SYSOUTP   DD SYSOUT=&OUT                                              00003700
//*                                                                     00003800
```

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```
//AQSDANAL PROC PROJECT='COMI.AQS',                                     00000100
//             PROGRAM=QASTATIS,                                        00000200
//             MSTRFIL=MIANS#07,                                        00000300
//             STATFIL=STMST#AA,                                        00000400
//             UNIT=SYSDA,                                              00000500
//             DISP='NEW,PASS,DELETE',                                  00000600
//             SPCUNIT=TRK,                                             00000700
//             PRIMARY=100,                                             00000800
//             SECNDRY=50,                                              00000900
//             RECFM=FB,                                                00001000
//             LRECL=1A0,                                               00001100
//             BLKSIZE=1B4A,                                            00001200
//             OUT=A                                                    00001300
//*                                                                     00001400
//ANALYZE EXEC PGM=&PROGRAM,                                           00001500
//             REGION=140K,                                            00001600
//             TIME=(1,0)                                              00001700
//*                                                                     00001800
//* PERFORM STATISTICAL ANALYSIS OF READINGS IN AQOMS MASTER FILE       00001900
//*                                                                     00002000
//STEPLIB   DD DSNAME=&PROJECT..LOAD,                                  00002100
//             DISP=(SHR,PASS)                                         00002200
//*                                                                     00002300
//* INPUT DATA SET - AQOMS MASTER FILE                                  00002400
//*                                                                     00002500
//FT08F001  DD DSNAME=&PROJECT..DATA.&MSTRFIL,                         00002600
//             DISP=(SHR,PASS)                                         00002700
//*                                                                     00002800
//* INPUT DATA SET - KEY PORTION OF PARAMETER, METHOD, UNIT TABLE       00002900
//*                                                                     00003000
//FT09F001  DD DSNAME=&&PARAMIMP,                                      00003100
//             DISP=(OLD,DELETE)                                       00003200
//*                                                                     00003300
//* OUTPUT DATA SET - STATISTICS FILE                                   00003400
//*                                                                     00003500
//FT10F001  DD UNIT=&UNIT,                                             00003600
//             DISP=&DISP,                                             00003700
//             SPACE=(&SPCUNIT,(&PRIMARY,&SECNDRY),RLSE),              00003800
//             DSNAME=&PROJECT..DATA.&STATFIL,                         00003900
//             DCB=(RECFM=&RECFM,LRECL=&LRECL,BLKSIZE=&BLKSIZE)        00004000
//*                                                                     00004100
//* OUTPUT DATA SET - DIAGNOSTIC MESSAGES                               00004200
//*                                                                     00004300
//FT08F001  DD SYSOUT=&OUT                                             00004400
//*                                                                     00004500
//* OUTPUT DATA SETS - SYSTEM OPERATION                                 00004600
//*                                                                     00004700
//SYSPRINT  DD SYSOUT=&OUT                                             00004800
//*                                                                     00004900
//SYSUDUMP  DD SYSOUT=&OUT                                             00005000
```

```
//AQSELIST PROC PROJECT='CORT.AQS',                                00000100
//             PROGRAM=AMPTLST,                                    00000200
//             MSTRFIL='MSTR(+1)',                                 00000300
//             PARMAFL='PRM1(0)',                                  00000400
//             PARMDFL='PRM2(0)',                                  00000500
//             SITEFIL='SITE(0)',                                  00000600
//             STNDFIL='STND(0)',                                  00000700
//             OUT=A                                               00000800
//*                                                                00000900
//REPORT  EXEC PGM=&PROGRAM,                                       00001000
//             REGION=150K,                                        00001100
//             TIME=2                                              00001200
//*                                                                00001300
//* LIST CONTENTS OF AQDMS MASTER FILE                             00001400
//*                                                                00001500
//SITEFILE  DD DSNAME=&PROJECT..LOAD,                              00001600
//             DISP=(SHR,PASS)                                     00001700
//*                                                                00001800
//* INPUT DATA SET - CONTROL CARD                                  00001900
//*                                                                00002000
//AQSINPUT  DD DDNAME=INPUT,                                       00002100
//             DCB=BLKSIZE=80                                      00002200
//*                                                                00002300
//* INPUT DATA SET - AQDMS MASTER FILE                             00002400
//*                                                                00002500
//AQSMASTR  DD DSNAME=&PROJECT..DATA.&MSTRFIL,                     00002600
//             DISP=(SHR,PASS)                                     00002700
//*                                                                00002800
//* INPUT DATA SET - KEY PORTION OF PARAMETER, METHOD, UNIT TABLE  00002900
//*                                                                00003000
//AQSPARMK  DD DSNAME=&PROJECT..DATA.&PARMAFL,                     00003100
//             DISP=(SHR,PASS)                                     00003200
//*                                                                00003300
//* INPUT DATA SET - DESCRIPTION PORTION OF TABLE                  00003400
//*                                                                00003500
//AQSPARMD  DD DSNAME=&PROJECT..DATA.&PARMDFL,                     00003600
//             DISP=(SHR,PASS)                                     00003700
//*                                                                00003800
//* INPUT DATA SET - VALID SITE CODE TABLE                         00003900
//*                                                                00004000
//AQSSITES  DD DSNAME=&PROJECT..DATA.&SITEFIL,                     00004100
//             DISP=(SHR,PASS)                                     00004200
//*                                                                00004300
//* INPUT DATA SET - PARAMETER STANDARDS TABLE                     00004400
//*                                                                00004500
//AQSSTNDRD DD DSNAME=&PROJECT..DATA.&STNDFIL,                     00004600
//             DISP=(SHR,PASS)                                     00004700
//*                                                                00004800
//* OUTPUT DATA SET - REPORT LISTING                               00004900
//*                                                                00005000
```

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AQSELIST (Cont.)

```
//AQSPRINT DD SYSOUT=&OUT                                    00005100
//*                                                          00005200
//* OUTPUT DATA SETS - SYSTEM OPERATION                      00005300
//*                                                          00005400
//SYSPRINT DD SYSOUT=&OUT                                    00005500
//*                                                          00005600
//SYSOUT   DD SYSOUT=&OUT                                    00005700
//*                                                          00005800
//SYSCPOUT DD SYSOUT=&OUT                                    00005900
//*                                                          00006000
//SYSCTEMP DD SYSOUT=&OUT                                    00006100
//*                                                          00006200
//SYSDUMP  DD SYSOUT=&OUT                                    00006300
//*                                                          00006400
```

```
//AQSFUPDT PROC PROJECT='CURI.AQS',                                    00000100
//             PROG1=TXTREDIT,                                         00000200
//             PROG2=FXFILMNT,                                         00000300
//             OLDMSTR='MSTR(0)',                                      00000400
//             NEWMSTR='MSTR(+1)',                                     00000500
//             PARMKFL='PRM1(0)',                                      00000600
//             SITEFIL='SITE(0)',                                      00000700
//             UNIT=TAPE,                                              00000800
//             SERIAL=,                                                00000900
//             DISP='NEW,CATLG,DELETE',                                00001000
//             TEMP=SYSDA,                                             00001100
//             WORKSPC=400,                                            00001200
//             SORTCTL=TSORTCTL,                                       00001300
//             OUT=A                                                   00001400
//*                                                                    00001500
//EDIT    EXEC PGM=&PROG1,                                             00001600
//             REGION=130K,                                            00001700
//             TIME=10                                                 00001800
//*                                                                    00001900
//* EDIT AQDMS FILE MAINTENANCE TRANSACTIONS                           00002000
//*                                                                    00002100
//STEPLIB   DD DSNAME=&PROJECT..LOAD,                                  00002200
//             DISP=(SHR,PASS)                                         00002300
//*                                                                    00002400
//* INPUT DATA SET - EDIT OPTIONS CONTROL CARD                         00002500
//*                                                                    00002600
//AQSOPTIN  DD DDNAME=OPTIONS,                                         00002700
//             DCB=BLKSIZE=80                                          00002800
//*                                                                    00002900
//* INPUT DATA SET - AQDMS TRANSACTIONS                                00003000
//*                                                                    00003100
//AQSTRANS  DD DDNAME=INPUT,                                           00003200
//             DCB=BLKSIZE=80                                          00003300
//*                                                                    00003400
//* INPUT DATA SET - KEY PORTION OF VALID PARM, METH, UNIT TABLE       00003500
//*                                                                    00003600
//AQSPARMS  DD DSNAME=&PROJECT..DATA,&PARMKFL,                         00003700
//             DISP=(SHR,PASS)                                         00003800
//*                                                                    00003900
//* INPUT DATA SET - VALID SITE CODE TABLE                             00004000
//*                                                                    00004100
//AQSSITES  DD DSNAME=&PROJECT..DATA,&SITEFIL,                         00004200
//             DISP=(SHR,PASS)                                         00004300
//*                                                                    00004400
//* OUTPUT DATA SET - AQDMS INTERNAL TRANSACTIONS                      00004500
//*                                                                    00004600
//AQSINTRN  DD UNIT=&TEMP,                                             00004700
//             DISP=(NEW,PASS,DELETE),                                 00004800
//             SPACE=(TRK,(&WORKSPC),RLSE),                            00004900
//             DSNAME=&&TRANS,                                         00005000
//             DCB=(RECFM=FB,LRECL=68,BLKSIZE=7004)                    00005100
//*                                                                    00005200
//* OUTPUT DATA SET - TRANSACTION LISTING                              00005300
//*                                                                    00005400
//AQSCONFM  DD SYSOUT=&OUT                                             00005500
//*                                                                    00005600
//* OUTPUT DATA SET - DIAGNOSTIC MESSAGES                              00005700
//*                                                                    00005800
//AQSPRINT  DD SYSOUT=&OUT                                             00005900
```

AQSFUPDT (cont.)

```
//*                                                                    00006000
//* OUTPUT DATA SETS - SYSTEM OPERATION                                00006100
//*                                                                    00006200
//SYSPRINT  DD SYSOUT=&OUT                                             00006300
//*                                                                    00006400
//SYSOUT    DD SYSOUT=&OUT                                             00006500
//*                                                                    00006600
//SYSDBOUT  DD SYSOUT=&OUT                                             00006700
//*                                                                    00006800
//SYSOTERM  DD SYSOUT=&OUT                                             00006900
//*                                                                    00007000
//SYSUDUMP  DD SYSOUT=&OUT                                             00007100
//*                                                                    00007200
//SORT    EXEC PGM=IERRCOOO,                                           00007300
//             PARM='CORE=40960',                                      00007400
//             REGION=98K,                                             00007500
//             TIME=6                                                  00007600
//*                                                                    00007700
//* SORT INTERNAL TRANSACTIONS INTO FILE SEQUENCE                      00007800
//*                                                                    00007900
//SORTLIB DD   DSNAME=SYS1.SORTLIB,                                    00008000
//             DISP=(SHR,PASS)                                         00008100
//*                                                                    00008200
//SYSOUT    DD SYSOUT=&OUT                                             00008300
//*                                                                    00008400
//SORTWK01  DD UNIT=&TEMP,                                             00008500
//             SPACE=(TRK,(&WORKSPC),,CONTIG)                          00008600
//*                                                                    00008700
//SORTWK02  DD UNIT=(&TEMP,SEP=SORTWK01),                              00008800
//             SPACE=(TRK,(&WORKSPC),,CONTIG)                          00008900
//*                                                                    00009000
//SORTWK03 DD  UNIT=(&TEMP,SEP=(SORTWK01,SORTWK02)),                   00009100
//             SPACE=(TRK,(&WORKSPC),,CONTIG)                          00009200
//*                                                                    00009300
//SORTIN    DD DSNAME=&&TRANS,                                         00009400
//             DISP=(OLD,DELETE),                                      00009500
//             DCB=(RECFM=FB,LRECL=68,BLKSIZE=7004)                    00009600
//*                                                                    00009700
//SORTOUT   DD UNIT=&TEMP,                                             00009800
//             DISP=(NEW,PASS,DELETE),                                 00009900
//             SPACE=(TRK,(&WORKSPC),RLSE),                            00010000
//             DSNAME=&&SORTED,                                        00010100
//             DCB=(RECFM=FB,LRECL=68,BLKSIZE=7004)                    00010200
//*                                                                    00010300
//SYSIN     DD DSNAME=&PROJECT..SYSIN(&SORTCTL),                       00010400
//             DISP=(SHR,PASS)                                         00010500
//*                                                                    00010600
//UPDATE  EXEC PGM=&PROG2,                                             00010700
//             REGION=98K,                                             00010800
//             TIME=20                                                 00010900
//*                                                                    00011000
//* MAINTAIN AQDMS MASTER FILE                                         00011100
//*                                                                    00011200
//STEPLIB   DD DSNAME=&PROJECT..LOAD,                                  00011300
//             DISP=(SHR,PASS)                                         00011400
//*                                                                    00011500
//* INPUT DATA SET - FILE MAINTENANCE CONTROL CARD                     00011600
//*                                                                    00011700
//AQSINPUT  DD DDNAME=INPUT,                                           00011800
```

```
//                DCB=BLKSIZE=80                                          00011900
//*                                                                       00012000
//* INPUT DATA SET - SORTED INTERNAL TRANSACTIONS                         00012100
//*                                                                       00012200
//AQSINTRN  DD DSNAME=&&SORTED,                                           00012300
//             DISP=(OLD,DELETE),                                         00012400
//             DCB=(RECFM=FB,LRECL=80,BLKSIZE=7004)                       00012500
//*                                                                       00012600
//* INPUT DATA SET - AQDHS OLD MASTER FILE                                00012700
//*                                                                       00012800
//AQSOLDMS  DD DSNAME=&PROJECT..DATA.&OLDMSTR,                            00012900
//             DISP=(SHR,PASS)                                            00013000
//*                                                                       00013100
//* OUTPUT DATA SET - AQDHS NEW MASTER FILE                               00013200
//*                                                                       00013300
//AQSNEWMS  DD UNIT=&UNIT,                                                00013400
//             VOL=SER=&SERIAL,                                           00013500
//             DISP=(&DISP),                                              00013600
//             DCB=(SYS3.DSCB,RECFM=VB,BLKSIZE=7100),                     00013700
//             DSNAME=&PROJECT..DATA.&NEWMSTR                             00013800
//*                                                                       00013900
//* OUTPUT DATA SET - INTERNAL TRANSACTION LISTING                        00014000
//*                                                                       00014100
//AQSCONFR  DD SYSOUT=&OUT                                                00014200
//*                                                                       00014300
//* OUTPUT DATA SET - DIAGNOSTIC MESSAGES                                 00014400
//*                                                                       00014500
//AQSPRINT  DD SYSOUT=&OUT                                                00014600
//*                                                                       00014700
//* OUTPUT DATA SET - OLD MASTER LISTING                                  00014800
//*                                                                       00014900
//AQSOLDRC  DD DUMMY,DCB=BLKSIZE=2000                                     00015000
//*                                                                       00015100
//* OUTPUT DATA SET - NEW MASTER LISTING                                  00015200
//*                                                                       00015300
//AQSNEWRC  DD DUMMY,DCB=BLKSIZE=2000                                     00015400
//*                                                                       00015500
//* OUTPUT DATA SETS - SYSTEM OPERATION                                   00015600
//*                                                                       00015700
//SYSPRINT  DD SYSOUT=&OUT                                                00015800
//*                                                                       00015900
//SYSOUT    DD SYSOUT=&OUT                                                00016000
//*                                                                       00016100
//SYSLOGOUT DD SYSOUT=&OUT                                                00016200
//*                                                                       00016300
//SYSOTERM  DD SYSOUT=&OUT                                                00016400
//*                                                                       00016500
//SYSUDUMP  DD SYSOUT=&OUT                                                00016600
//*                                                                       00016700
```

```
//AQSHUPD1 PROC PROJECT='CORI.AWS',                                    00000100
//              PROGNAM=MATABLE1,                                      00000200
//              OLDMST1='PRM1(0)',                                     00000300
//              OLDMST2='PRM2(0)',                                     00000400
//              NEWMST1='PRM1(+1)',                                    00000500
//              NEWMST2='PRM2(+1)',                                    00000600
//              UNIT1=2314,                                            00000700
//              UNIT2=2314,                                            00000800
//              SERIAL1=COMUD1,                                        00000900
//              SERIAL2=COMUD1,                                        00001000
//              DISP1='NEW,CATLG,DELETE',                              00001100
//              DISP2='NEW,CATLG,DELETE',                              00001200
//              SPUNIT1=TRK,                                           00001300
//              SPUNIT2=TRK,                                           00001400
//              PRIMRY1=30,                                            00001500
//              PRIMRY2=30,                                            00001600
//              SCNDRY1=10,                                            00001700
//              SCNDRY2=10,                                            00001800
//              TEMP=SYSDA,                                            00001900
//              SORTSPC=20,                                            00002000
//              SORTCTL=&SRTCTL1,                                      00002100
//              OUT=A                                                  00002200
//*                                                                    00002300
//SORT    EXEC PGM=IERRCOOO,                                          00002400
//              PARM='CORE=40K,60',                                    00002500
//              REGION=60K,                                            00002600
//              TIME=(1,0)                                             00002700
//*                                                                    00002800
//* SORT INCOMING TRANSACTIONS INTO FILE SEQUENCE                      00002900
//*                                                                    00003000
//SORTLIB DD    DSNAME=SYS1.SORTLIB,                                   00003100
//              DISP=(SHR,PASS)                                        00003200
//*                                                                    00003300
//SYSOUT    DD  SYSOUT=AOUT                                          00003400
//*                                                                    00003500
//SORTWK01  DD  UNIT=&TEMP,                                          00003600
//              SPACE=(TRK,&SORTSPC,,CONTIG)                           00003700
//*                                                                    00003800
//SORTWK02  DD  UNIT=(&TEMP,SEP=SORTWK01),                           00003900
//              SPACE=(TRK,&SORTSPC,,CONTIG)                           00004000
//*                                                                    00004100
//SORTWK03  DD  UNIT=(&TEMP,SEP=(SORTWK01,SORTWK02)),                00004200
//              SPACE=(TRK,&SORTSPC,,CONTIG)                           00004300
//*                                                                    00004400
//SORTIN    DD  DDNAME=INPUT,                                        00004500
//              DCB=BLKSIZE=80                                         00004600
//*                                                                    00004700
//SORTOUT   DD  UNIT=(&TEMP,SEP=(SORTWK01,SORTWK02,SORTWK03)),       00004800
//              DISP=(NEW,PASS,DELETE),                              00004900
//              SPACE=(TRK,&SORTSPC,,CONTIG)                         00005000
```

```
//                DSNAME=&&TRANS,                                          00005100
//                DCB=(RECFM=F,LRECL=80,BLKSIZE=80)                        00005200
//*                                                                        00005300
//SYSIN     DD DSNAME=&PROJECT..SYSIN(&SUBTITLE),                          00005400
//                DISP=(SHR,PASS)                                          00005500
//*                                                                        00005600
//SMPLOG    EXEC PGM=&PRGNAME,                                             00005700
//                REGION=&REG,                                             00005800
//                TIME=(1,0)                                               00005900
//*                                                                        00006000
//* MAINTAIN PARAMETER, RETRIEVE, UNIT, MIN DETECTABLE TABLES              00006100
//*                                                                        00006200
//SYSPLIB   DD DSNAME=&PROJECT..LOAD,                                      00006300
//                DISP=(SHR,PASS)                                          00006400
//*                                                                        00006500
//* INPUT DATA SET - CONTROL CARD AND, OPTIONALLY, TRANSACTIONS            00006600
//*                                                                        00006700
//AQSCARDS  DD DSNAME=&&TRANS,                                             00006800
//                DISP=(OLD,DELETE)                                        00006900
//*                                                                        00007000
//* INPUT DATA SET - OLD MASTER KEY PORTION TABLE                          00007100
//*                                                                        00007200
//AQSOLDT1  DD DSNAME=&PROJECT..DATA.&OLDMST1,                             00007300
//                DISP=(SHR,PASS)                                          00007400
//*                                                                        00007500
//* INPUT DATA SET - OLD MASTER DESCRIPTION PORTION TABLE                  00007600
//*                                                                        00007700
//AQSOLDT2  DD DSNAME=&PROJECT..DATA.&OLDMST2,                             00007800
//                DISP=(SHR,PASS)                                          00007900
//*                                                                        00008000
//* OUTPUT DATA SET - NEW MASTER KEY PORTION TABLE                         00008100
//*                                                                        00008200
//AQSNEWT1  DD UNIT=&UNIT1,                                                00008300
//                VOL=SER=&SERIAL1,                                        00008400
//                DISP=(&DISP1),                                           00008500
//                SPACE=(&SPUNIT1,(&PRIMRY1,&SCNDRY1),RLSE),               00008600
//                DCB=(SYS1.DSCB,RECFM=F,LRECL=80,BLKSIZE=80),             00008700
//                DSNAME=&PROJECT..DATA.&NEWMST1                           00008800
//*                                                                        00008900
//* OUTPUT DATA SET - NEW MASTER DESCRIPTION PORTION TABLE                 00009000
//*                                                                        00009100
//AQSNEWT2  DD UNIT=&UNIT2,                                                00009200
//                VOL=SER=&SERIAL2,                                        00009300
//                DISP=(&DISP2),                                           00009400
//                SPACE=(&SPUNIT2,(&PRIMRY2,&SCNDRY2),RLSE),               00009500
//                DCB=(SYS1.DSCB,RECFM=F,LRECL=80,BLKSIZE=80),             00009600
//                DSNAME=&PROJECT..DATA.&NEWMST2                           00009700
//*                                                                        00009800
//* OUTPUT DATA SET - DIAGNOSTIC MESSAGES                                  00009900
//*                                                                        00010000
//AQSPRINT  DD SYSOUT=&OUT                                                 00010100
//*                                                                        00010200
```

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```
//* OUTPUT DATA SETS - SYSTEM OPERATION                              00010300
//*                                                                  00010400
//SYSPRINT DD SYSOUT=&OUT                                            00010500
//*                                                                  00010600
//SYSOUT   DD SYSOUT=&OUT                                            00010700
//*                                                                  00010800
//SYSUDUMP DD SYSOUT=&OUT                                            00010900
//*                                                                  00011000
//SYSUTERR DD SYSOUT=&OUT                                            00011100
//*                                                                  00011200
//SYSUDUMP DD SYSOUT=&OUT                                            00011300
//*                                                                  00011400
```

```
//AQSHUPD2 PROC PROJECT='COM1.AQS',                                    00000100
//              PROGRAM=MXTABLE2,                                      00000200
//              OLDMSTR='SITE(0)',                                     00000300
//              NEWMSTR='SITE(+1)',                                    00000400
//              UNIT=2314,                                             00000500
//              SERIAL=COMDO1,                                         00000600
//              DISP='NEW,CATLG,DELETE',                               00000700
//              SPCUNIT=TRK,                                           00000800
//              PRIMARY=10,                                            00000900
//              SECNDRY=5,                                             00001000
//              TEMP=SYSDA,                                            00001100
//              SORTSPC=10,                                            00001200
//              SORTCIL=&SRTCIL2,                                      00001300
//              OUT=A                                                  00001400
//*                                                                    00001500
//SORT    EXEC PGM=IERRCOOO,                                           00001600
//              PARM='CORE=&U960',                                     00001700
//              REGION=&UK,                                            00001800
//              TIME=(1,0)                                             00001900
//*                                                                    00002000
//* SORT INCOMING TRANSACTIONS INTO FILE SEQUENCE                      00002100
//*                                                                    00002200
//SORTLIB   DD DSNAME=SYS1.SORTLIB,                                    00002300
//              DISP=(SHR,PASS)                                        00002400
//*                                                                    00002500
//SYSOUT    DD SYSOUT=&OUT                                             00002600
//*                                                                    00002700
//SORTWK01  DD UNIT=&TEMP,                                             00002800
//              SPACE=(TRK,(&SORTSPC,,CONTIG)                          00002900
//*                                                                    00003000
//SORTWK02  DD UNIT=(&TEMP,SEP=SORTWK01),                              00003100
//              SPACE=(TRK,(&SORTSPC,,CONTIG)                          00003200
//*                                                                    00003300
//SORTWK03  DD UNIT=(&TEMP,SEP=(SORTWK01,SORTWK02)),                   00003400
//              SPACE=(TRK,(&SORTSPC,,CONTIG)                          00003500
//*                                                                    00003600
//SORTIN    DD DUNAME=INPUT,                                           00003700
//              DCB=BLKSIZE=80                                         00003800
//*                                                                    00003900
//SORTOUT   DD UNIT=(&TEMP,SEP=(SORTWK01,SORTWK02,SORTWK03)),          00004000
//              DISP=(NEW,PASS,DELETE),                                00004100
//              SPACE=(TRK,(&SORTSPC,&RLSE),                           00004200
//              DSNAME=&&TRANS,                                        00004300
//              DCB=(RECFM=F,LRECL=80,BLKSIZE=80)                      00004400
//*                                                                    00004500
//SYSIN     DD DSNAME=&PROJECT..SYSIN(&SORTCIL),                       00004600
//              DISP=(SHR,PASS)                                        00004700
//*                                                                    00004800
//UPDATE  EXEC PGM=&PROGRAM,                                           00004900
//              REGION=&UK,                                            00005000
```

```
//             TIME=(1,0)                                          00005100
//*                                                                 00005200
//* MAINTAIN VALID SITE CODE TABLE                                  00005300
//*                                                                 00005400
//STEPLIB   DD DSNAME=&PROJECT..LOAD,                             00005500
//             DISP=(SHR,PASS)                                     00005600
//*                                                                 00005700
//* INPUT DATA SET - TRANSACTIONS                                   00005800
//*                                                                 00005900
//AQSTRANS  DD DSNAME=&TRANS,                                     00006000
//             DISP=(OLD,DELETE)                                   00006100
//*                                                                 00006200
//* INPUT DATA SET - OLD VALID SITE CODE TABLE                      00006300
//*                                                                 00006400
//AQSOLDMS  DD DSNAME=&PROJECT..DATA.&OLDMSTR,                    00006500
//             DISP=(SHR,PASS)                                     00006600
//*                                                                 00006700
//* OUTPUT DATA SET - NEW VALID SITE CODE TABLE                     00006800
//*                                                                 00006900
//AQSNEWMS  DD UNIT=&UNIT,                                        00007000
//             VOL=SER=&SERIAL,                                    00007100
//             DCB=(SYS3.DSCB,RECFM=F,LRECL=80,BLKSIZE=80),        00007200
//             DISP=(&DISP),                                       00007300
//             SPACE=(&SPCUNIT,(&PRIMARY,&SECNDRY),RLSE),          00007400
//             DSNAME=&PROJECT..DATA.&NEWMSTR                      00007500
//*                                                                 00007600
//* OUTPUT DATA SET - DIAGNOSTIC MESSAGES                           00007700
//*                                                                 00007800
//AQSPRINT  DD SYSOUT=&OUT                                        00007900
//*                                                                 00008000
//* OUTPUT DATA SETS - SYSTEM OPERATION                             00008100
//*                                                                 00008200
//SYSPRINT  DD SYSOUT=&OUT                                        00008300
//*                                                                 00008400
//SYSOUT    DD SYSOUT=&OUT                                        00008500
//*                                                                 00008600
//SYSUDUMP  DD SYSOUT=&OUT                                        00008700
//*                                                                 00008800
//SYSLIB    DD SYSOUT=&OUT                                        00008900
//*                                                                 00009000
//SYSUDUMP  DD SYSOUT=&OUT                                        00009100
//*                                                                 00009200
```

```
//AQSHUPD3 PROC PROJECT='COMI.AQS',                                    00000100
//             PROGRAM=MASTAMLE3,                                      00000200
//             OLDMST='STND(0)',                                       00000300
//             NEWMST='STND(+1)',                                      00000400
//             UNIT=2314,                                              00000500
//             SERIAL=(COMD01),                                        00000600
//             DISP='NEW,CATLG,DELETE',                                00000700
//             SPCUNIT=TRK,                                            00000800
//             PRIMARY=10,                                             00000900
//             SECNDRY=5,                                              00001000
//             TEMP=SYSDA,                                             00001100
//             SORTSPC=10,                                             00001200
//             SORTCTL=SORTCTL3,                                       00001300
//             OUT=A                                                   00001400
///*                                                                   00001500
//SORT    EXEC PGM=IERRCOOO,                                          00001600
//             PARM='CORE=0480',                                       00001700
//             REGION=80K,                                             00001800
//             TIME=(1,0)                                              00001900
///*                                                                   00002000
///* SORT INCOMING TRANSACTIONS INTO FILE SEQUENCE                     00002100
///*                                                                   00002200
//SORTLIB   DD DSNAME=SYS1.SORTLIB,                                    00002300
//             DISP=(SHR,PASS)                                         00002400
///*                                                                   00002500
//SYSOUT    DD SYSOUT=&OUT                                             00002600
///*                                                                   00002700
//SORTWK01  DD UNIT=&TEMP,                                             00002800
//             SPACE=(TRK,&SORTSPC,,CONTIG)                            00002900
///*                                                                   00003000
//SORTWK02  DD UNIT=(&TEMP,SEP=SORTWK01),                              00003100
//             SPACE=(TRK,&SORTSPC,,CONTIG)                            00003200
///*                                                                   00003300
//SORTWK03  DD UNIT=(&TEMP,SEP=(SORTWK01,SORTWK02)),                   00003400
//             SPACE=(TRK,&SORTSPC,,CONTIG)                            00003500
///*                                                                   00003600
//SORTIN    DD DUNAME=INPUT,                                           00003700
//             DCB=BLKSIZE=80                                          00003800
///*                                                                   00003900
//SORTOUT   DD UNIT=(&TEMP,SEP=(SORTWK01,SORTWK02,SORTWK03)),          00004000
//             DISP=(NEW,PASS,DELETE),                                 00004100
//             SPACE=(TRK,&SORTSPC,RLSE),                              00004200
//             DSNAME=&&TRANS,                                         00004300
//             DCB=(RECFM=F,LRECL=80,BLKSIZE=80)                       00004400
///*                                                                   00004500
//SYSIN     DD DSNAME=&PROJECT,,SYSIN(&SORTCTL),                       00004600
//             DISP=(SHR,PASS)                                         00004700
///*                                                                   00004800
//COBJAIL EXEC PGM=&PROGRAM,                                           00004900
//             REGION=80K                                              00005000
```

```
//             TIME=(1,0)                                          00005100
//*                                                                 00005200
//* MAINTAIN PARAMETER STANDARDS TABLE                              00005300
//*                                                                 00005400
//&STEPLIB   DD DSNAME=&PROJECT..LOAD,                             00005500
//              DISP=(SHR,PASS)                                     00005600
//*                                                                 00005700
//* INPUT DATA SET - TRANSACTIONS                                   00005800
//*                                                                 00005900
//&TRANS     DD DSNAME=&TRANS,                                     00006000
//              DISP=(OLD,DELETE)                                   00006100
//*                                                                 00006200
//* INPUT DATA SET - OLD STANDARDS TABLE                            00006300
//*                                                                 00006400
//&OLDSTD    DD DSNAME=&PROJECT..DATA.&OLDMSTR,                    00006500
//              DISP=(SHR,PASS)                                     00006600
//*                                                                 00006700
//* OUTPUT DATA SET - NEW STANDARDS TABLE                           00006800
//*                                                                 00006900
//&NEWSTD    DD UNIT=&UNIT,                                        00007000
//              VOL=SER=&SERIAL,                                    00007100
//              DISP=(&DISP),                                       00007200
//              SPACE=(&SPCUNIT,(&PRIMARY,&SECNDRY),RLSE),          00007300
//              DCB=(SYS3.OSC,RECFM=F,LRECL=80,BLKSIZE=80),         00007400
//              DSNAME=&PROJECT..DATA.&NEWMSTR                      00007500
//*                                                                 00007600
//* OUTPUT DATA SET - DIAGNOSTIC MESSAGES                           00007700
//*                                                                 00007800
//&SPRINT    DD SYSOUT=&OUT                                        00007900
//*                                                                 00008000
//* OUTPUT DATA SETS - SYSTEM OPERATION                             00008100
//*                                                                 00008200
//SYSPRINT   DD SYSOUT=&OUT                                        00008300
//*                                                                 00008400
//SYSOUT     DD SYSOUT=&OUT                                        00008500
//*                                                                 00008600
//SYSPROUT   DD SYSOUT=&OUT                                        00008700
//*                                                                 00008800
//SYSUTPRT   DD SYSOUT=&OUT                                        00008900
//*                                                                 00009000
//SYSUDUMP   DD SYSOUT=&OUT                                        00009100
//*                                                                 00009200
```

```
//AQSILIST PROC PROJECT='COM1.AMS',                                    00000100
//             PROGRAM=IXSLOAD0,                                       00000200
//             MSTRFIL='MSTR(+1)',                                     00000300
//             PARMFIL='PRM1(0)',                                      00000400
//             PARMDFL='PRM2(0)',                                      00000500
//             SITEFIL='SITE(0)',                                      00000600
//             STNDFIL='STND(0)',                                      00000700
//             OUT=A                                                   00000800
//*                                                                    00000900
//REPORT  EXEC PGM=&PROGRAM,                                           00001000
//             REGION=1400K,                                           00001100
//             TIME=(1,00)                                             00001200
//*                                                                    00001300
//* LIST CONTENTS OF AQDMS MASTER FILE WITH SLIDING AVERAGE OF READINGS 00001400
//*                                                                    00001500
//SITEFILE  DD DSNAME=&PROJECT..LOAD,                                  00001600
//             DISP=(SHR,PASS)                                         00001700
//*                                                                    00001800
//* INPUT DATA SET - CONTROL CARD                                      00001900
//*                                                                    00002000
//AQSINPUT  DD DUMMY,                                                  00002100
//             DCB=BLKSIZE=80                                          00002200
//*                                                                    00002300
//* INPUT DATA SET - AQDMS MASTER FILE                                 00002400
//*                                                                    00002500
//AQSMASTR  DD DSNAME=&PROJECT..DATA.&MSTRFIL,                         00002600
//             DISP=(SHR,PASS)                                         00002700
//*                                                                    00002800
//* INPUT DATA SET - KEY PORTION OF PARAMETER, METHOD, UNIT TABLE      00002900
//*                                                                    00003000
//AQSPARMK  DD DSNAME=&PROJECT..DATA.&PARMFIL,                         00003100
//             DISP=(SHR,PASS)                                         00003200
//*                                                                    00003300
//* INPUT DATA SET - DESCRIPTION PORTION OF TABLE                      00003400
//*                                                                    00003500
//AQSPARMD  DD DSNAME=&PROJECT..DATA.&PARMDFL,                         00003600
//             DISP=(SHR,PASS)                                         00003700
//*                                                                    00003800
//* INPUT DATA SET - VALID SITE CODE TABLE                             00003900
//*                                                                    00004000
//AQSSITES  DD DSNAME=&PROJECT..DATA.&SITEFIL,                         00004100
//             DISP=(SHR,PASS)                                         00004200
//*                                                                    00004300
//* INPUT DATA SET - PARAMETER STANDARDS TABLE                         00004400
//*                                                                    00004500
//AQSTNDRD  DD DSNAME=&PROJECT..DATA.&STNDFIL,                         00004600
//             DISP=(SHR,PASS)                                         00004700
//*                                                                    00004800
//* OUTPUT DATA SET - REPORT LISTING                                   00004900
//*                                                                    00005000
```

```
//AQSPRINT DD SYSOUT=A,OUT                                      00005100
//*                                                             00005200
//* OUTPUT DATA SETS - SYSTEM OPERATION                         00005300
//*                                                             00005400
//SYSPRINT DD SYSOUT=A,OUT                                      00005500
//*                                                             00005600
//SYSOUT   DD SYSOUT=A,OUT                                      00005700
//*                                                             00005800
//SYSDUMP  DD SYSOUT=A,OUT                                      00005900
//*                                                             00006000
//SYSUDUMP DD SYSOUT=A,OUT                                      00006100
//*                                                             00006200
//SYSABEND DD SYSOUT=A,OUT                                      00006300
//*                                                             00006400
```

```
//AQSMSENT PROC PROJECT='COM1.AQS',                                00000100
//             PROGRAM=MASENTNL,                                   00000200
//             MSTFILE=,                                           00000300
//             STATFILE=XTMSTAA,                                   00000400
//             TEMP=SYSDA,                                         00000500
//             DISP='NEW,PASS,DELETE',                             00000600
//             SPCUNIT=TRK,                                        00000700
//             PRIMARY=100,                                        00000800
//             SECNDRY=20,                                         00000900
//             OUT=A                                               00001000
//*                                                                00001100
//SENTINEL EXEC PGM=&PROGRAM,                                      00001200
//             REGION=400K,                                        00001300
//             TIME=(1,0)                                          00001400
//*                                                                00001500
//* COPY MASTER FILE AND APPEND SENTINEL RECORD                    00001600
//*                                                                00001700
//STEPLIB   DD DSNAME=&PROJECT..LOAD,                              00001800
//             DISP=(SHR,PASS)                                     00001900
//*                                                                00002000
//* INPUT DATA SET - AQCMS MASTER FILE                             00002100
//*                                                                00002200
//AQSMASTR  DD DSNAME=&PROJECT..DATA.&MSTFILE,                     00002300
//             DISP=(SHR,PASS)                                     00002400
//*                                                                00002500
//* OUTPUT DATA SET - FLAGGED MASTER FILE                          00002600
//*                                                                00002700
//AQSENTNL  DD UNIT=&TEMP,                                         00002800
//             DCB=(RECFM=VB,BLKSIZE=7100),                        00002900
//             DISP=(&DISP),                                       00003000
//             SPACE=(&SPCUNIT,(&PRIMARY,&SECNDRY),RLSE),          00003100
//             DSNAME=&PROJECT..DATA.&STATFIL                      00003200
//*                                                                00003300
//* OUTPUT DATA SET - MESSAGE LISTING                              00003400
//*                                                                00003500
//AQSPRINT  DD SYSOUT=&OUT                                         00003600
//*                                                                00003700
//* OUTPUT DATA SETS - SYSTEM OPERATION                            00003800
//*                                                                00003900
//SYSPRINT  DD SYSOUT=&OUT                                         00004000
//*                                                                00004100
//SYSOUT    DD SYSOUT=&OUT                                         00004200
//*                                                                00004300
//SYSDMOUT  DD SYSOUT=&OUT                                         00004400
//*                                                                00004500
//SYSUTERM  DD SYSOUT=&OUT                                         00004600
//*                                                                00004700
//SYSUDUMP  DD SYSOUT=&OUT                                         00004800
//*                                                                00004900
```

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```
//xxSENTINEL PROC PROJECT='COMT.AQS',                                   00000100
//              PROGRAM=AXSENTNL,                                       00000200
//              PARMFIL='PRM1(0)',                                      00000300
//              UNIT=SYSDA,                                             00000400
//              DISP='NEW,PASS,DELETE',                                 00000500
//              SPCUNIT=TRK,                                            00000600
//              PRIMARY=100,                                            00000700
//              SECNDRY=20,                                             00000800
//              OUT=A                                                   00000900
//*                                                                     00001000
//SENTINEL EXEC PGM=&PROGRAM,                                           00001100
//              REGION=500K,                                            00001200
//              TIME=(1,0)                                              00001300
//*                                                                     00001400
//* COPY PARAMETER KEY FILE AND APPEND SENTINEL RECORD                  00001500
//*                                                                     00001600
//SYSPRINT  DD DSNAME=&PROJECT..LOAD,                                   00001700
//              DISP=(SHR,PASS)                                         00001800
//*                                                                     00001900
//* INPUT DATA SET - KEY PORTION OF PARAMETER, METHOD, UNIT TABLE       00002000
//*                                                                     00002100
//AQSPARMK DD DSNAME=&PROJECT..DATA.&PARMFIL,                           00002200
//              DISP=(SHR,PASS)                                         00002300
//*                                                                     00002400
//* OUTPUT DATA SET - FLAGGED KEY FILE                                  00002500
//*                                                                     00002600
//AQSPARMP  DD UNIT=&UNIT,                                              00002700
//              DISP=(&DISP),                                           00002800
//              SPACE=(&SPCUNIT,(&PRIMARY,&SECNDRY),RLSE),              00002900
//              DCB=(RECFM=F,LRECL=80,BLKSIZE=80),                      00003000
//              DSNAME=&&PARAMTMP                                       00003100
//*                                                                     00003200
//* OUTPUT DATA SET - MESSAGE LISTING                                   00003300
//*                                                                     00003400
//AQSPRINT  DD SYSOUT=&OUT                                              00003500
//*                                                                     00003600
//* OUTPUT DATA SETS - SYSTEM OPERATION                                 00003700
//*                                                                     00003800
//SYSPRINT  DD SYSOUT=&OUT                                              00003900
//*                                                                     00004000
//SYSOUT    DD SYSOUT=&OUT                                              00004100
//*                                                                     00004200
//SYSDPOUT  DD SYSOUT=&OUT                                              00004300
//*                                                                     00004400
//SYSDTERM  DD SYSOUT=&OUT                                              00004500
//*                                                                     00004600
//SYSDUMP   DD SYSOUT=&OUT                                              00004700
//*                                                                     00004800
```

```
//AQSRETVR PROC PROJECT='CUNI.AQS',                                    00000100
//             PROGRAM=ALNGPRC,                                        00000200
//             TEMP=SYSDA,                                             00000300
//             MSTRFILE='MSTR(0)',                                     00000400
//             ANSRFILE=ANSRAA,                                        00000500
//             DISP='SHR,PASS,DELETE',                                 00000600
//             SPCUNITS=1-R,                                           00000700
//             PRIMARY=100,                                            00000800
//             SECNDRY=50,                                             00000900
//             OUT=A                                                   00001000
//*                                                                    00001100
//COMPILE EXEC PGM=&PROGRAM,                                           00001200
//             REGION=80K,                                             00001300
//             TIME=(1,0)                                              00001400
//*                                                                    00001500
//* PRODUCE AQDMS RETRIEVAL PROGRAM                                    00001600
//*                                                                    00001700
//STEPLIB   DD DSNAME=&PROJECT..LOAD,                                  00001800
//             DISP=(SHR,PASS)                                         00001900
//*                                                                    00002000
//* INPUT DATA SET - RETRIEVAL PROGRAM SKELETON                        00002100
//*                                                                    00002200
//AQSINPGM  DD DSNAME=&PROJECT..RTRETRVR,                              00002300
//             DISP=(OLD,KEEP)                                         00002400
//*                                                                    00002500
//* INPUT DATA SET - RETRIEVAL SPECIFICATION CARDS                     00002600
//*                                                                    00002700
//AQSINPUT  DD DDNAME=INPUT,                                           00002800
//             DCB=BLKSIZE=80                                          00002900
//*                                                                    00003000
//* OUTPUT DATA SET - RETRIEVAL PROGRAM                                00003100
//*                                                                    00003200
//AQSRTRVR  DD UNIT=&TEMP,                                             00003300
//             DISP=(NEW,PASS),                                        00003400
//             SPACE=(TRK,(5,2),RLSE),                                 00003500
//             DSNAME=&&PROGRAM                                        00003600
//*                                                                    00003700
//* OUTPUT DATA SET - DIAGNOSTIC MESSAGES                              00003800
//*                                                                    00003900
//AQSPRINT  DD SYSOUT=&OUT                                             00004000
//*                                                                    00004100
//* OUTPUT DATA SETS - SYSTEM OPERATION                                00004200
//*                                                                    00004300
//SYSPRINT  DD SYSOUT=&OUT                                             00004400
//*                                                                    00004500
//SYSOUT    DD SYSOUT=&OUT                                             00004600
//*                                                                    00004700
//SYSCHOUT  DD SYSOUT=&OUT                                             00004800
//*                                                                    00004900
//SYSJTERM  DD SYSOUT=&OUT                                             00005000
```

```
//*                                                                     00005100
//SYSOUT4  DD SYSOUT=&OUT                                               00005200
//*                                                                     00005300
//COBOL    EXEC PGM=IKFCBL00,                                           00005400
//             PARM='SIZE=1144K,BUF=30K,LIB,NOSEQ,NOSOURCE,NOSUPMAP',   00005500
//             REGION=144K,                                             00005600
//             TIME=(2,0)                                               00005700
//*                                                                     00005800
//* COMPILE RETRIEVAL PROGRAM                                           00005900
//*                                                                     00006000
//*                                                                     00006100
//* INPUT DATA SET - SOURCE LIBRARY                                     00006200
//*                                                                     00006300
//SYSLIB   DD DSNAME=&PROJECT..SOURCE,                                  00006400
//            DISP=(SHR,PASS)                                         00006500
//*                                                                     00006600
//* INPUT DATA SET - COBOL RETRIEVAL PROGRAM SOURCE CODE                00006700
//*                                                                     00006800
//SYSIN    DD DSNAME=&&PROGRAM,                                         00006900
//            DISP=(OLD,DELETE)                                       00007000
//*                                                                     00007100
//* OUTPUT DATA SET - DIAGNOSTIC MESSAGES                               00007200
//*                                                                     00007300
//SYSPRINT DD SYSOUT=&OUT                                               00007400
//*                                                                     00007500
//* OUTPUT DATA SET - COBOL RETRIEVAL PROGRAM OBJECT CODE               00007600
//*                                                                     00007700
//SYSLIN   DD UNIT=&TEMP,                                               00007800
//            DISP=(NEW,PASS),                                        00007900
//            SPACE=(TRK,(50,5),RLSE),                                00008000
//            DCB=(RECFM=FB,LRECL=80,BLKSIZE=1600),                   00008100
//            DSNAME=&&OBJMOD                                         00008200
//*                                                                     00008300
//* UTILITY DATA SETS                                                   00008400
//*                                                                     00008500
//SYSUT1   DD UNIT=&TEMP,                                               00008600
//            SPACE=(TRK,(50,100))                                    00008700
//*                                                                     00008800
//SYSUT2   DD UNIT=(&TEMP,SEP=SYSUT1),                                  00008900
//            SPACE=(TRK,(50,100))                                    00009000
//*                                                                     00009100
//SYSUT3   DD UNIT=(&TEMP,SEP=(SYSUT1,SYSUT2)),                         00009200
//            SPACE=(TRK,(50,100))                                    00009300
//*                                                                     00009400
//SYSUT4   DD UNIT=(&TEMP,SEP=(SYSUT1,SYSUT2,SYSUT3)),                 00009500
//            SPACE=(TRK,(50,100))                                    00009600
//*                                                                     00009700
//*                                                                     00009800
//LKED     EXEC PGM=IEWL,                                               00009900
//             PARM='LIST,LET,XREF',                                    00010000
//             COND=(5,LT,COBOL),                                       00010100
//             REGION=100K,                                             00010200
//             TIME=(1,0)
```

```
//*                                                                     00010300
//* CA-ROSCOE RETRIEVAL                                                 00010400
//*                                                                     00010500
//*                                                                     00010600
//* INPUT DATA SET - AUTO-CALL LIBRARY                                  00010700
//SYSLIB    DD DSNAME=&PROJECT..LOAD,                                   00010800
//             DISP=(SHR,PASS)                                          00010900
//          DD DSNAME=SYS3.COBLIBV3,DISP=SHR                            00011000
//          DD DSNAME=SYS1.SUBLIB,DISP=SHR                              00011100
//*                                                                     00011200
//* INPUT DATA SET - COBOL RETRIEVAL PROGRAM OBJECT CODE                00011300
//*                                                                     00011400
//SYSLIN    DD DSNAME=&&OBJMOD,                                         00011500
//             DISP=(OLD,DELETE)                                        00011600
//*                                                                     00011700
//* OUTPUT DATA SET - DIAGNOSTIC MESSAGES                               00011800
//*                                                                     00011900
//SYSPRINT  DD SYSOUT=A,OUT                                             00012000
//*                                                                     00012100
//* OUTPUT DATA SET - COBOL RETRIEVAL PROGRAM LOAD MODULE               00012200
//*                                                                     00012300
//SYSLMOD   DD UNIT=ATEMP,                                              00012400
//             DISP=(MOD,PASS),                                         00012500
//             SPACE=(TRK,(10,5,1)),                                    00012600
//             DSNAME=&&LOADMOD(RETRIEVE)                               00012700
//*                                                                     00012800
//* UTILITY DATA SET                                                    00012900
//*                                                                     00013000
//SYSUT1    DD UNIT=ATEMP,                                              00013100
//             SPACE=(TRK,(10,5))                                       00013200
//*                                                                     00013300
//RETRIEVE EXEC PGM=*.LKED.SYSLMOD,                                     00013400
//             COND=((5,LT,COBOL),(5,LT,LKED)),                         00013500
//             REGION=600K,                                             00013600
//             TIME=(1,0)                                               00013700
//*                                                                     00013800
//* RETRIEVE ANSWER FILE FROM AMDMS MASTER FILE                         00013900
//*                                                                     00014000
//STEPLIB   DD DSNAME=&PROJECT..LOAD,                                   00014100
//             DISP=(SHR,PASS)                                          00014200
//*                                                                     00014300
//* INPUT DATA SET - AMDMS MASTER FILE                                  00014400
//*                                                                     00014500
//AMSMASTR  DD DSNAME=&PROJECT..DATA.&MSTRFIL,                          00014600
//             DISP=(SHR,PASS)                                          00014700
//*                                                                     00014800
//* OUTPUT DATA SET - ANSWER FILE                                       00014900
//*                                                                     00015000
//AMSANSAR  DD UNIT=SYSDA,                                              00015100
//             DISP=(&DISP),                                            00015200
//             SPACE=(&SPCUNIT,(&PRIMARY,&SECNDRY),RLSE),               00015300
//             DCB=(RECFM=VM,BLKSIZE=7100),                             00015400
```

```
//             DSNAME=&PROJECT..DATA.&ANSWER                    00015500
//*                                                             00015600
//* OUTPUT DATA SET - DIAGNOSTIC MESSAGES                       00015700
//*                                                             00015800
//AQSRETVR  DD SYSOUT=&OUT                                      00015900
//*                                                             00016000
//* OUTPUT DATA SETS - SYSTEM OPERATION                         00016100
//*                                                             00016200
//SYSPRINT  DD SYSOUT=&OUT                                      00016300
//*                                                             00016400
//SYSOUT    DD SYSOUT=&OUT                                      00016500
//*                                                             00016600
//SYSLHOUT  DD SYSOUT=&OUT                                      00016700
//*                                                             00016800
//SYSOUTERR DD SYSOUT=&OUT                                      00016900
//*                                                             00017000
//SYSUDUMP  DD SYSOUT=&OUT                                      00017100
//*                                                             00017200
```

```
//AQSSLIST PROC PROJECT='COM1.AQS',                                    00000100
//             PROGRAM='SAPRINTS',                                     00000200
//             PARMFILE='PRM1(0)',                                     00000300
//             PARMUFILE='PRM2(0)',                                    00000400
//             SITEFILE='SITE(0)',                                     00000500
//             STNUFILE='STNU(0)',                                     00000600
//             STATFILE='STANSHO7',                                    00000700
//             OUT=A                                                   00000800
//*                                                                    00000900
//PRINTS EXEC PGM=&PROGRAM,                                            00001000
//             REGION=4M,                                              00001100
//             TIME=(1,0)                                              00001200
//*                                                                    00001300
//* LIST DATA ANALYSIS STATISTICS FILE                                 00001400
//*                                                                    00001500
//SYSPLIB   DD DSNAME=&PROJECT..LOAD,                                  00001600
//             DISP=(SHR,PASS)                                         00001700
//*                                                                    00001800
//* INPUT DATA SET - AQUAS STATISTICS FILE                             00001900
//*                                                                    00002000
//AQSTATIS  DD DSNAME=&PROJECT..DATA.&STATFIL,                         00002100
//             DISP=(SHR,PASS)                                         00002200
//*                                                                    00002300
//* INPUT DATA SET - KEY PORTION OF PARAMETER, METHOD, UNIT TABLE      00002400
//*                                                                    00002500
//AQSPARMK  DD DSNAME=&PROJECT..DATA.&PARMKFL,                         00002600
//             DISP=(SHR,PASS)                                         00002700
//*                                                                    00002800
//* INPUT DATA SET - DESCRIPTION PORTION OF TABLE                      00002900
//*                                                                    00003000
//AQSPARMD  DD DSNAME=&PROJECT..DATA.&PARMUFL,                         00003100
//             DISP=(SHR,PASS)                                         00003200
//*                                                                    00003300
//* INPUT DATA SET - VALID SITE CODE TABLE                             00003400
//*                                                                    00003500
//AQSSITES  DD DSNAME=&PROJECT..DATA.&SITEFIL,                         00003600
//             DISP=(SHR,PASS)                                         00003700
//*                                                                    00003800
//* INPUT DATA SET - PARAMETER STANDARDS TABLE                         00003900
//*                                                                    00004000
//AQSTNUMD  DD DSNAME=&PROJECT..DATA.&STNUFIL,                         00004100
//             DISP=(SHR,PASS)                                         00004200
//*                                                                    00004300
//* OUTPUT DATA SET - REPORT LISTING                                   00004400
//*                                                                    00004500
//AQSPRINT  DD SYSOUT=&OUT                                             00004600
//*                                                                    00004700
//* OUTPUT DATA SETS - SYSTEM OPERATION                                00004800
//*                                                                    00004900
//SYSPRINT  DD SYSOUT=&OUT                                             00005000
```

AQSSLIST (Cont.)

```
//*                                                                    00005100
//SYSOUT   DD SYSOUT=(,OUT                                             00005200
//*                                                                    00005300
//SYSPRINT DD SYSOUT=(,OUT                                             00005400
//*                                                                    00005500
//SYSOUTERR DD SYSOUT=(,OUT                                            00005600
//*                                                                    00005700
//SYSOUTAP DD SYSOUT=(,OUT                                             00005800
//*                                                                    00005900
```

```
//AQSTEDIT PROC PROJECT='CORI.AQS',                                    00000100
//              PROG1=IXTREDIT,                                        00000200
//              PARMKFL='PRM1(0)',                                     00000300
//              SITEFIL='SITE(0)',                                     00000400
//              OUT=A                                                  00000500
//*                                                                    00000600
//EDIT    EXEC PGM=&PROG1,                                           00000700
//              REGION=130K,                                           00000800
//              TIME=(1,0)                                             00000900
//*                                                                    00001000
//* EDIT AQDMS FILE MAINTENANCE TRANSACTIONS                           00001100
//*                                                                    00001200
//STEPLIB   DD DSNAME=&PROJECT..LOAD,                                  00001300
//             DISP=(SHR,PASS)                                         00001400
//*                                                                    00001500
//* INPUT DATA SET - EDIT OPTIONS CONTROL CARD                         00001600
//*                                                                    00001700
//AQSOPTIN  DD DDNAME=OPTIONS,                                         00001800
//             DCB=BLKSIZE=80                                          00001900
//*                                                                    00002000
//* INPUT DATA SET - AQDMS TRANSACTIONS                                00002100
//*                                                                    00002200
//AQSTRANS  DD DDNAME=INPUT,                                           00002300
//             DCB=BLKSIZE=80                                          00002400
//*                                                                    00002500
//* INPUT DATA SET - KEY PORTION OF VALID PARM, METH, UNIT TABLE       00002600
//*                                                                    00002700
//AQSPARMS  DD DSNAME=&PROJECT,,DATA,&PARMKFL,                         00002800
//             DISP=(SHR,PASS)                                         00002900
//*                                                                    00003000
//* INPUT DATA SET - VALID SITE CODE TABLE                             00003100
//*                                                                    00003200
//AQSSITES  DD DSNAME=&PROJECT,,DATA,&SITEFIL,                         00003300
//             DISP=(SHR,PASS)                                         00003400
//*                                                                    00003500
//* OUTPUT DATA SET - AQDMS INTERNAL TRANSACTIONS                      00003600
//*                                                                    00003700
//AQSINTRN DD DUMMY,DCB=(RECFM=FB,LRECL=68,BLKSIZE=7004)               00003800
//*                                                                    00003900
//*                                                                    00004000
//* OUTPUT DATA SET - TRANSACTION LISTING                              00004100
//*                                                                    00004200
//AQSCONFR  DD SYSOUT=&OUT                                             00004300
//* OUTPUT DATA SET - DIAGNOSTIC MESSAGES                             00004400
//*                                                                    00004500
//AQSPRINT  DD SYSOUT=&OUT                                             00004600
//*                                                                    00004700
//* OUTPUT DATA SETS - SYSTEM OPERATION                               00004800
//*                                                                    00004900
//SYSPRINT  DD SYSOUT=&OUT                                             00005000
//*                                                                    00005100
//SYSOUT    DD SYSOUT=&OUT                                             00005200
//*                                                                    00005300
//SYSDBOUT  DD SYSOUT=&OUT                                             00005400
//*                                                                    00005500
//SYSOTERM  DD SYSOUT=&OUT                                             00005600
//*                                                                    00005700
//SYSUDUMP  DD SYSOUT=&OUT                                             00005800
//*                                                                    00005900
```

CDHSCBLE

```
//CDHSCBLE PROC IN=,OUT=                                                00000100
//CDH EXEC PGM=IKFCBL00,REGION=140K,COND=(0,NE),TIME=3,                 00000200
//  PARM='DMAP,SAREA,LIB,CLIST,STATE,FLOW=10,SIZE=114K,BUF=30K'         00000300
//STEPLIB DD DSN=SYS3.COBV3M1,DISP=SHR                                  00000400
//SYSPRINT DD SYSOUT=A,DCB=(BLKSIZE=121,LRECL=121,BUFNO=1)              00000500
//SYSUT1 DD UNIT=SYSDA,SPACE=(CYL,(4,1)),DCB=BLKSIZE=460                00000600
//SYSUT2 DD UNIT=SYSDA,SPACE=(CYL,(4,1)),DCB=BLKSIZE=460                00000700
//SYSUT3 DD UNIT=SYSDA,SPACE=(CYL,(4,1)),DCB=BLKSIZE=460                00000800
//SYSUT4 DD UNIT=SYSDA,SPACE=(CYL,(4,1)),DCB=BLKSIZE=460                00000900
//SYSLIN DD DSN=&&LOADSET,DISP=(MOD,PASS),UNIT=SYSDA,                   00001000
//       DCB=(RECFM=FB,LRECL=80,BLKSIZE=400),                           00001100
//  SPACE=(CYL,(1,1))                                                   00001200
//SYSIN DD DSN=COBI.AWS.SOURCE(&IN),DISP=(OLD,PASS,KEEP)                00001300
//LKED EXEC PGM=IEWL,PARM='LIST,XREF,LET',COND=(0,NE),REGION=96K        00001400
//SYSLIN DD DSN=&&LOADSET,DISP=(OLD,DELETE)                             00001500
//SYSLMOD DD DSN=COBI.AWS.LOAD(&OUT),DISP=(OLD,PASS,KEEP)               00001600
//SYSLIB DD DSN=SYS3.COBLIBV3,DISP=SHR                                  00001700
//       DD DSN=SYS1.SUBLIB,DISP=SHR                                    00001800
//SYSUT1 DD UNIT=(SYSDA,SEP=(SYSLIN,SYSLMOD)),SPACE=(CYL,(4,1))         00001900
//SYSPRINT DD SYSOUT=A                                                  00002000
```